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1. *Contributions to a Knowledge of the Fauna of South-West Africa.* IV: *A List of the Heteropterous and Homopterous Hemiptera of South-West Africa.* By A. J. Hesse, B.Sc., Ph.D., Assistant. (With Plates I–VIII.)

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1. *Contributions to a Knowledge of the Fauna of South-West Africa.*

IV. A List of the *Heteropterous* and *Homopterous Hemiptera* of South-West Africa.—By A. J Hesse, B.Sc., Ph.D., Assistant.

(With Plates I–VIII.)

The following is a list of the *Hemiptera* present in the South African Museum collections and those described from the same region by other authors. The list comprises all the families of the *Heteroptera* and *Homoptera*, except the *Jassidae*, *Aphidae*, and *Coccidae*. The insects were mostly collected by members of the staff on the Museum Expeditions of 1916 (R. W. E. Tucker), 1918 (R. W. E. Tucker), 1919 (Lightfoot and J. Drury), 1921 (K. H. Barnard, J. Drury, and S. Gilman), and 1923 (K. H. Barnard and R. F. Lawrence). In addition, there are specimens obtained from private collectors, such as J. S. Brown, E. Köchig, Dr. Knobel, Miss Wilman, and the well-known traveller Eriksson.

The list includes geographically only those species found within the boundaries of S.-W. Africa, comprising the three areas of Great Namaqualand, Damaraland, and Ovamboland. In each instance both the area and the locality are stated, and "S.A.M." is printed opposite those species of which the Museum possesses representatives, and (M. Exp.) after the names of the localities where members of the staff collected the species.

The figures are free-hand drawings by the author.

The *Hemiptera* of S.-W. Africa have been sadly neglected by entomologists in the past, and the only literature up to 1913 dealing with descriptions of species from that region is C. Stål's "Hemiptera Africana," pts. 1–4, 1864–66, and the few descriptions of isolated species by other authors in different works (alluded to in the list) from material that found its way into European collections. A definite survey of the order in this region was for the first time undertaken in 1913 by F. Schumacher in a list, with descriptions of new species, which was published in the "Jenaische Denkschriften," xvii, pp. 50–88, as a result of Dr. L. Schultze's "Forschungsreise im West. und Zent. Südafrika, 1903–1905."

As a result of the Museum Expeditions up to 1924, we have been able to enrich the knowledge of that region by the descriptions of several new and interesting species. Altogether 11 new genera, 58 new species, and 2 new varieties are described in the following families :—

Pentatomidae, 11 n. sp., 1 n. var.
Coreidae, 6 n. sp.
Lygaeidae, 2 n. gen., 8 n. sp.
Tingididae, 1 n. gen., 1 n. sp.
Reduviidae, 3 n. gen., 11 n. sp., and 1 n. var.
Cicadidae, 3 n. sp.
Fulgoridae, 5 n. gen., 17 n. sp.
Cercopidae, 1 n. sp.

It is interesting to note that some genera described only from the East (India) are represented here by different species or by closely allied representative genera. Many of the new forms are described from N. Damaraland and Ovamboland, while Great Namaqualand seems to agree faunistically more or less with the Cape Province, or rather S.-Western Cape Province. There seems to be a zoogeographical division, agreeing more or less with tropical and S.-Eastern Africa, with representatives or allied forms from the Oriental region. No definite distributional similarity could, however, be laid down, as a comprehensive faunistic survey of Africa within the Southern tropical zone and the S.-Eastern regions has as yet not been undertaken. The interposed arid and desert regions of the Karroo, the Kalahari, and Bechuanaland seem to have acted as a barrier between S.-Eastern and S.-Western Africa. There is no doubt, however, that S.-Eastern Africa meets Ovamboland and S.-Western Africa across Southern Rhodesia. Damaraland and Great Namaqualand constitute an area invaded from the South by S.-Western

Cape forms, and from N.-Western and S.-Central Africa by tropical stragglers.

I wish to express my indebtedness to the above-mentioned present and past members of the staff, and to the private collectors, who have contributed so many interesting specimens to the Museum collections. All types are in the South African Museum.

I. HETEROPTERA.

Fam. **PENTATOMIDAE** Leach.

Sub-fam. 1. **Plataspidinae** Dall.

Gen. Coptosoma L. de Castelnau.

1832. L. de Castelnau, Essai, p. 73.
1876. Stål, Enum., v, p. 10.

Globocoris Hahn, Wanz., ii, p. 40, 1834.

Type.—*C. globus* Fabr.

C. aurivillianum Montandon.

1894. Montandon, Ann. Soc. Ent. Belg., xxxviii, 1894.

Hab.—Damaraland—Swakop (coll. Wahlberg).

C. pictula Stål.

1864. Stal, Hem. Afr., i, p. 14.

Hab.—Namaqualand—Kubub-Aar (Schultze).

C. rufiplaga n. sp.
(Pl. I, fig. 1.) S.A.M.

Body convex, about as long as broad, black and shining; the head, the pronotum, the scutellum, and the abdomen beneath finely punctuate; a spot in front of the eye on each lateral lobe, the ocelli, two spots near the anterior margin of the pronotum, the anterior lateral dilated pronotal margin on each side, an intramarginal fascia (sometimes interrupted in the middle) on each side, and posteriorly confluent with the marginal fascia, a spot at each basal angle of the scutellum, the ventral basal part of the head, the basal part of the costal region of the wing, a spot on each side on the external apical angle of the metastethium, the margin of the abdomen (interrupted at the segmental sutures), the lateral abdominal oblique spots (a large one and a small one in each ventral segment), an oblique fascia on each side of the sixth ventral segment, and a spot on each side of the genital segment (♀) callous and yellow; two transverse fasciae on the pronotum just before the middle, a spot near each posterior lateral angle (sometimes absent), and two oblique fasciae at the base of the scutellum impunctate, orange red; the extreme apex on the head, the eyes, the fourth antennal joint, the rostrum, the coxae, and the legs reddish brown; the antennae, the apices on the femora, and the tibiae lighter and yellowish. The head triangular, truncated apically, with the lateral lobes as long as the medial one; the antennae finely pilose, the second joint slender and the longest, the fourth joint slightly incrassate, very slightly longer than the third; rostrum slender, extending to the posterior coxae; pronotum longer than the head, medially transversely slightly depressed, with the antero-lateral margins dilated, with the anterior margin slightly sinuate, the anterior angles rounded, and the posterior lateral angles slightly tumid; scutellum large, convex, completely covering the abdomen; pectoral region dull, opaque, black and transversely rugulose; abdomen convex beneath, feebly rugulose, punctuated, especially along the ventral sutures; genital segment (♀), tibiae and tarsi pilose.

Length, ♀ 4–4½ mm.
Breadth, ♀ acr. pron. 3 mm.
,, ♀ acr. abd. 3½–4 mm.

One ♀ specimen has the margin of the scutellum and three or four obscure small spots on each side on the posterior lateral surface of the scutellum orange red. As it does not differ from the type specimen in other characters, it may be considered as a variation.

Hab.—Ovamboland—Omaramba (coll. Eriksson).

Sub-fam. 2. **Scutellerinae** de Castelnau.

TRIBE 1. ELVISURARIA Stål.

Gen. ELVISURA Spin.

1837. Spinola, Essai, p. 357.
1864. Stål, Hem. Afr., i, p. 35.
1866. Mayr, Reis. Nov. Hem., p. 13.

Oxypryma Stål, Enum, iii, p. 5, 1873.
,, Distant, Faun. Brit. Ind. Rhyn. Het., vol. i, p. 39, 1902.

Type.—*E. irrorata* Spin.

E. irrorata Spin. S.A.M.

1837. Spinola, Essai, p. 359.
1903. Schouteden, Rhynch. Aeth., i, p. 5, pl. i, fig. 1.
Hab.—Ovamboland—Kambele, Kunene R. (M. Exp.).

Gen. SOLENOSTHEDIUM Spin.

1837. Spinola, Essai, p. 360.
1843. Amyot et Serville, Hem., p. 26.
1873. Stål, Enum., iii, p. 5.

Coeloglossa Germar, Zeitschr., i, p. 130, 1839.
,, Stål, Hem. Afr., i, pp. 35 and 42, 1864.

Type.—*S. lilligerum* Thb.

S. lilligerum Thb. S.A.M.

1783. Thunberg, Nov. Ins., sp. 2, p. 32.
1864. Stål, Hem. Afr., i, p. 52.

furcifer Burmeister, Handb., II, i, p. 395, 1835.
,, Blanchard, Hist. des Ins., iii, p. 158, 1840.
sehestedi Germar, Zeitschr., i, p. 139, 1839.
Hab.—Damaraland — Grootfontein, Narebis, Nuragas, Tsumeb, Windhuk (M. Exp.), Waterberg-Otanjande, Windhuk (Seewald).
Ovamboland—Andoni, Kunene R., Nomtele (M. Exp.), Omaramba (Eriksson).

TRIBE 2. SPHAEROCORARIA Stål.

Gen. STEGANOCERUS Mayr.

1864. Mayr, Verh. Zool. Bot. Ges. Wien., xiv, p. 903.
1866. Mayr, Reis. Nov. Hem., pp. 19 and 20.
1873. Stål, Enum., iii, p. 6.

Type.—*S. multipunctatus* Thb.

S. multipunctatus Thb. S.A.M.

1783. Thunberg, Nov. Ins. sp., ii, p. 3 (*Cimex*).
1873. Stål, Enum., iii, p. 6.

impluviatus Germar, Zeitschr., i, p. 77, 1839.
argus Dallas, List, i, p. 8, 1851.
Hab.—Damaraland—Nuragas (M. Exp.).
Ovamboland—Omaramba (Eriksson).

Gen. SPHAEROCORIS Burm.

1835. Burmeister, Handb., ii, p. 390.
1864. Stål, Hem. Afr., i, pp. 35 and 46.

Type.—*S. annulus* Fabr.

S. annulus Fabr. (=*S. ocellatus* Klug). S.A.M.

1834. Klug, Symb., v, pl. xliii, figs. 1–3 (*Tetyra*).
1835. Burmeister, Handb., II, i, p. 391.
1864. Stål, Hem. Afr., i, p. 46.

argus Gerstaecker, v. d. Decken's Reise., iii, 2, p. 395, 1873.
Hab.—Ovamboland, Omaramba (Eriksson).

S. testudo-grisea de Geer. S.A.M.

1778. de Geer, Mém. Hist. Ins., vii, p. 616, pl. xlvi, figs. 2 and 3.
1866. Stål, Hem. Afr., iv, p. 252.

punctarius Stål, Hem. Afr., i, p. 49, 1864.
„ Stål, Enum., iii, p. 7, 1873.
„ Gerstaecker, v. d. Decken's Reise., iii, 2, p. 396, 1873.
Hab.—Damaraland—Namutoni-Outjo (Seewald).
Ovamboland—Omaramba (Eriksson).

TRIBE 3. SCUTELLERARIA Stål.

Gen. CALLIDEA L. de Castelnau.

1832. L. de Castelnau, Essai, p. 71.
1835. Burmeister, Handb., II, i, p. 393.
1864. Stål, Hem. Afr., i, pp. 35 and 41.
1873. Stål, Enum., iii, p. 23.

Libyssa Dallas, List, i, pp. 4 and 20, 1851.

Type.—*C. signata* Fabr.

C. duodecimpunctata Fabr. (=*C. Dregei* Germar). S.A.M.

1798. Fabricius, Ent. Syst. Suppl., p. 527 (*Cimex*).
1837. Germar in Silberm. Rev., v, p. 191.
1864. Stål, Hem. Afr., i, p. 42.
1873. Stål, Enum., p. 23.

examinans White, Tr. Ent. Soc. Lond., iii, p. 85, 1842.
signoreti Stål, Oefv. Vet. Ak. Förh., p. 210, 1853.

duodecimpunctata Schaum, Peters' Reis. Moss. Ins., 35, 1862.
Hab.—Namaqualand (according to Rehbock).
Damaraland — Grootfontein (Volkmann), Grootfontein-Namutoni and Namutoni-Outjo (Seewald), Okahandja (Schultze and Dinter), Tsumeb (Howes).

TRIBE 4. TETYRARIA Stål.

Gen. HOTEA Am. et Serv.

1843. Amyot et Serville, Hem., p. 41.
1851. Dallas, List, i, pp. 5 and 39.
1864. Stål, Hem. Afr., i, pp. 35 and 53.
1876. Stål, Enum., iii, p. 24.

Sub-gen. *Phymatogonia* Stål, Enum., iii, pp. 24 and 25, 1873.
Sub-gen. *Tylonca* Stål, Enum., iii, pp. 24 and 25, 1873.

Type.—*H. gambiae* Westwd. (=*H. subfasciata* Westwd.).

H. subfasciata Westwd. S.A.M.

1837. Westwood in Hope Cat., i, p. 11.
1864. Stål, Hem. Afr., i, p. 54.

falcata Germar in Silberm. Rev., v, p. 191, 1837.
gambiae Dallas, List, i, p. 39, 1851.
vicina Signoret, Rev. et Mag. Zool., p. 441, 1851.
Hab.—Damaraland—Tsumeb (Heimann).
Ovamboland—Omaramba (Eriksson), Uwuthya (M. Exp.).

Gen. DEROPLAX Mayr.

1864. Mayr, Verh. Zool. Bot. Ges. Wien., xiv, p. 905.
1874. Stål, Enum., iii, p. 25.

Argocoris Mayr, *loc. cit.*, 1864.
Sergia Stål, Hem. Afr., i, pp. 35 and 56, 1864.
,, Mayr, Reis. Nov. Hem., p. 15, 1866.

Type.—*D. circumducta* Germ.

D. obscura Dall. S.A.M.

1851. Dallas, List, i, p. 40.
1864. Stål, Hem. Afr., i, p. 58.

natalensis Stål, Oefv. Vet. Ak. Förh., p. 211, 1853.
Hab.—Damaraland (Eriksson).

D. illota Stål. S.A.M.

1858. Stål, Oefv. Vet. Ak. Förh., p. 311.
1864. Stål, Hem. Afr., i, p. 58.

Hab.—Damaraland — Otjituo (M. Exp.), Windhuk (Breddin), Namutoni (M. Exp.).

TRIBE 5. ODONTOTARSARIA Stål.

Gen. ALPHOCORIS Germ.

1839. Germar, Zeitschr., i, p. 58.
1851. Dallas, List, i, p. 5.
1864. Stål, Hem. Afr., i, pp. 35 and 60.
1866. Mayr, Reis. Nov. Hem., p. 13.
1873. Stål, Enum., iii, p. 26.

Sphenaspis Jakowleff, Troudy. Ent. Ross., x, p. 72, 1878.

Type.—*A. lixoides* Germ.

A. indutus Stål. S.A.M.

1864. Stål, Hem. Afr., i, p. 61.
1873. Stål, Enum., iii, p. 27.

Hab.—Damaraland—Tsintsabis, Tsumeb, Otjituo (M. Exp.). Ovamboland—Omaramba (Eriksson).

Gen. XEROBIA Stål.

1873. Stål, Enum., iii, p. 29.

Type.—*X. sculpturata* Stål.

X. sculpturata Stål. S.A.M.

1858. Stål, Oefv. Vet. Ak. Förh., p. 311.
1864. Stål, Hem. Afr., i, p. 61.
1873. Stål, Enum., iii, p. 29.

Hab.—Damaraland—Karibib (M. Exp.), Otjiwarongo (J. Brown), Swakop (Stål), Rooibank (Schultze), Windhuk (Breddin), Outjo (Langheld).

Sub-fam. 3. **Graphosomatinae** Dist.

TRIBE 1. GRAPHOSOMATARIA Schout.

Gen. BOLBOCORIS Am. et Serv.

1843. Amyot et Serville, Hem., p. 50.
1851. Dallas, List, i, p. 44.
1864. Stål, Hem. Afr., i, p. 85.
1876. Stål, Enum., v, p. 30.
1903. Schouteden, Rhynch. Aethiop., 1, i, p. 99.
Dybowskyia Jakowleff, Bull. Mosc., ii, p. 85.

Type.—*B. rufus* Westwd. (=*tricolor* Am. et Serv.).

B. obscuricornis Stål. S.A.M.

1858. Stål, Oefv. Vet. Ak. Förh., p. 311.
1864. Stål, Hem. Afr., i, p. 87.
Hab.—Damaraland—Otjituo (M. Exp.).

B. parmatus n. sp. S.A.M.

(Pl. I, fig. 3.)

Body slightly longer than broad, brownish ochraceous; the basal spot on the eyes, the anterior pronotal margin, the antero-lateral parts, the obsolete and irregular transverse rugosities, and an obsolete longitudinal ruga on the pronotum, the callosities near the basal angles of the scutellum, the lateral parts, the medial longitudinal impunctate carina and the posterior margins of the scutellum, the upper part of the prostethium, the basal costal part of the corium, an interrupted fascia across the meso- and metastethia, and the acetabula feebly punctuated, paler, more yellowish; the head, the pronotum, the scutellum, the basal parts of the coria, and the entire ventral surface covered with dark brown punctuations; the antennae, the eyes, the ocelli, the first rostral joint, the medial line on the rostrum, the coxae, the trochanters and the tarsi reddish brown; the bases and apices of the second and fourth antennal joints, the fifth joint, the sutures between the cephalic lobes, the basal part of the head, the apical part on the under surface of the head, the apex of the rostrum, the anterior intramarginal punctuations, some punctuations surrounding the two anterior rugae, the foveate areas on each side near the posterior lateral angles and the posterior margin, the punctuations near the scutellar callosities, the posterior lateral regions of the scutellum, a spot on the posterior apical angle of the prostethium, two interrupted fasciae on each side across the meso- and metastethia, the entire sternum, the medial part of the first abdominal segment beneath, the margin and a broad lateral fascia on each side of the abdomen continuous on the sixth ventral segment blackish brown.

The head triangular, with the lateral lobes longer than the medial lobe and contiguous apically, with the sides slightly sinuate beyond the slight projections in front of the eyes ; ocelli situated posteriorly to the eyes, separated about three times their distance from the eyes ; antenniferous tubercles not visible from above ; antennae five-jointed, with the second joint slender, longer than the first, the third shorter than the second, but slightly longer than the fourth, the fifth slightly incrassate and longer than the second, the last two finely pilose ; rostrum extending to posterior coxae, first joint extending beyond the unarmed and slightly elevated bucculae, about equal to the second very slender joint, the third short and dilated ; pronotum about twice as long as the head, obsoletely rugulose anteriorly, foveate laterally near the prominent and rounded posterior lateral angles, anterior margin sinuate, lateral margins feebly sinuate, anterior lateral angles obtuse ; scutellum convex, extending to near the apex of the abdomen, medially carinate, with an oblique depression on each side demarcating the elevated basal part, the lateral margins sinuate, but the sides more or less parallel ; sternum sulcate ; abdomen convex, rugulose, and slightly tubercular along its lateral margins ; genital segment (♀), the coxae, the under surfaces of the tibiae and the tarsi pilose ; tarsi three-jointed, with the basal and apical joints about equal, longer than the second ; the ♂ slightly smaller than the ♀.

Length, ♂ 5 mm. ; ♀ 5·3 mm.

Breadth, ♂ acr. pron. 3·6 mm. ; ♀ 4 mm.

Breadth, ♂ acr. abd. 3·3 mm. ; ♀ $3\frac{1}{2}$–4 mm.

Hab.—Ovamboland—Otjimbumbe, Kunene R. (M. Exp.).

B. rufus Westwd. S.A.M.

1837. Westwood, Hope Cat. Hem., i, p. 12.
1839. Germar, Zeitschr., i, p. 57.
1839. Herr. Schaeffer, Wanz., v, p. 42, fig. 494.

carinatus Germar, Silberm. Rev., v, p. 188, 1837.
tricolor Amyot et Serville, Hem., p. 50, 1843.

Hab.—Damaraland—Gaub, Nuragas, Tsintsabis (M. Exp.), "N.-E. Damaraland" (Eriksson).
Ovamboland (after Eriksson)—Kunene R. and Namakunde (M. Exp.), Omaramba (Eriksson).

B. variolosus Germ. S.A.M.

1839. Germar, Zeitschr., i, p. 58.
1842. Klug, Preisverz, p. 12.
1859. Klug, Stett. Ent. Zeit., xx, p. 86.
1864. Stål, Hem. Afr., i, p. 87.

rufus Dallas, List, i, p. 45, 1851.
Hab.—Damaraland—Gaub (M. Exp.).

Gen. PHYMATOCORIS Stål.

1853. Stål, Oefv. Vet. Ak. Förh., p. 213.
1864. Stål, Hem. Afr., i, p. 88.
1876. Stål, Enum., v, p. 30.

Type.—*P. strumosus* Stål.

P. strumosus Stål. S.A.M.

1853. Stål, Oefv. Vet. Ak. Förh., p. 213.
1864. Stål, Hem. Afr., i, p. 88.
1903. Schouteden, Rhynch. Aethiop., 1, i, p. 110, pl. ii, fig. 9.

Hab.—Ovamboland—Omaramba (Eriksson).

Gen. BRACHYCEROCORIS Costa.

1863. Costa, Rend. Ac. Napl. (2), viii, p. 191.
1867. Stål, Oefv. Vet. Ak. Förh., p. 502.
1876. Stål, Enum., v, p. 30.

Teucrus Stål, Ann. Soc. Ent. Fr., p. 168, 1865.
Teressa Walker, Cat. Heter., i, p. 113, 1867.

Type.—*B. camelus* Costa.

B. afer Stål.

1876. Stål, Enum., v, p. 31.
1903. Schouteden, Rhynch. Aethiop., 1, i, p. 108, pl. ii, fig. 8.

Hab.—Damaraland (after Stål).

Sub-fam. 4. **Cydninae** Bilberg.

Gen. CEPHALOCTEUS Duf.

1834. Dufour, Ann. Soc. Ent. Fr., p. 342, pl. v, figs. 1–7.
1881. Signoret, *ibid.*, p. 38, pl. i, figs. 1–7.

Type.—*C. scaraboeoides* Fabr.

C. punctipennis Stål. S.A.M.

1876. Stål, Enum., v, p. 21.
1881. Signoret, Ann. Soc. Ent. Fr., p. 40, pl. i, fig. 2.

Hab.—Damaraland—Tsumeb (M. Exp.).

Gen. LACTISTES Schiödte.

1849. Schiödte, Kroy. Nat. Tidskr., ii, p. 456.
1881. Signoret, Ann. Soc. Ent. Fr., p. 48.

Type.—*L. vericulatus* Schiödte.

L. falcipes n. sp. S.A.M.

(Pl. I, figs. 2, 2*a*, and 2*b*.)

Deep chocolate brown and shining ; the head, the eyes, the anterior part of the pronotum, the basal part of the scutellum, the sutures between the clavus and scutellum, between the clavus and the corium, the lateral costal and subcostal parts on the corium and the spines on the tibiae darker ; the bases and apices of the antennal joints, the anterior reflected margins of the cephalic lobes, the bristles on the head, the ventral basal margin of the head, the second rostral joint, the articulations between the joints, the marginal bristles on the pronotum and basal costal margin of the corium, the acetabula, the coxae, the bristles on the femora, the apices of the slender spines and the bristles on the tibiae and abdomen, and all the tarsi reddish brown to golden yellow ; the ocelli red ; the membrane yellowish brown.

Head about half as long as the pronotum, with broad lateral lobes contiguous in front of the medial one, the anterior margins reflected and rounded, the basal interocellar part smooth and slightly elevated, the rest of the surface feebly punctuate, transversely rugulose ; each lateral lobe with five upright bristles ; eyes spinose at base ; the third, fourth and fifth antennal joints slightly incrassate, fusiform and finely pilose, second joint about as long as the first, slightly shorter than the third, the fourth with a slender base, slightly longer than the third, shorter than the fifth; rostrum extending to the posterior coxae, with the second joint longer than the first, the third about equal to the first and longer than the fourth; pronotum with the anterior part narrower than the posterior, with the surface punctuated anteriorly, antero-laterally and transversely behind the middle, leaving the posterior margin and angles free, with 7–9 bristles on each lateral margin and three long intramarginal bristles situated in slight depressions on each side (two anteriorly behind the eyes and one laterally at about the middle), with the posterior lateral angles not prominent; scutellum triangular, feebly punctuated medially; the clavus longitudinally punctuated along its corial suture; corium about as long as the pronotum is broad, traversed by longitudinal series of punctuations along the claval, costal, and subcostal regions, with three bristles on basal costal margin; membrane extending beyond the abdomen; the anterior acetabula prominently elevated; the coxae finely pilose posteriorly; ostioliferous canal (fig. 2*b*) armed with a blunt tubercle or recurved hooklet; abdomen convex, smooth, with a few bristles laterally and apically; femora armed with long slender backwardly directed bristles arranged more or less in two rows on their under surfaces; anterior tibiae compressed, paddle-like, armed with 6–8 spines on their outer margins, and with 5 or 6 major spines and some smaller ones and bristles on their inner margins and under surfaces; anterior tarsi inserted subapically; two posterior tibiae spinose, especially on their superior surfaces, with a crown of 8 or 9 spines on their apices.

Length, ♂ and ♀ to tip of membrane 7–8 mm.
Breadth, ♂ and ♀ acr. pron. 3½–4 mm.
Breadth, ♂ and ♀ acr. abd. 4 mm.
Hab.—Damaraland—Grootfontein, Nuragas, Windhoek (M. Exp.).
Ovamboland—Mafa, Namakunde (M. Exp.), Omaramba (Eriksson).

Gen. PLONISA Sign.

1881. Signoret, Ann. Soc. Ent. Fr., p. 326.

Type.—*P. tartarea* Stål.

P. plagiata Sign. S.A.M.

1881. Signoret, *loc. cit.*, p. 327, pl. xi, fig. 52.

Hab.—Ovamboland (coll. Eriksson).

Gen. CYDNUS Fabr.

1803. Fabricius (part), Syst. Rhyng., p. 184.
1882. Signoret, Ann. Soc. Ent. Fr. (6), xi, p. 145.

Aethus Dallas, List Hem., i, pp. 110 and 112, 1851.
,, Signoret, Ann. Soc. Ent. Fr., i, p. 423, 1882.
Microporus Uhler, Geol. Geog. Surv., p. 275, 1875.
Cyrtomenus Amyot et Serville (part), Hem., p. 90, 1843.

Type.—*C. nigritus* Fabr.

C. hirsutus n. sp. S.A.M.

(Pl. I, fig. 6.)

The body oval, black, shining; the eyes, the antennae, the rostrum, the posterior margin of the pronotum, often the medial part and the apex of the scutellum, the apical part of the corium, the femora, the tibiae, and the bristles on the head, pronotum, and the body deep reddish brown; the spines on the tibiae black; the fine hairs on the antennae, the apices of third, fourth, and fifth antennal joints, and the tarsi pale yellowish brown; the ocelli yellow or reddish; the membrane dirty yellowish white.

The head semicircular in front of the eyes, with the lateral lobes punctuated, as long as the medial one, with the anterior margins reflected upwards, on each side with five intra-marginal spines and four long bristles, with two bristles in slight depressions (one anteriorly and the other in front of the eye), with the posterior basal part smooth, slightly elevated; eyes spinose at their bases; the third, fourth, and fifth antennal joints fusiform, finely pilose, second joint slightly longer than the first, the third shorter than the second, the fourth and fifth of about equal length and slightly longer than the others; rostrum extending to about the middle coxae, the second joint longer than the first; pronotum about one and a half times the length of the head, slightly narrower anteriorly than posteriorly, with 13–14 bristles on each side and three intramarginal ones in slight depressions surrounded by dense punctuations (two anteriorly behind the eyes and one laterally at about the middle), with coarse punctuations anteriorly, antero-laterally and transversely behind the middle; scutellum large, triangular, slightly depressed basally, punctuated along its basal and lateral margins, with the disc punctuated densely apically near the feebly foveate apex; the costal margin of hemelytra with 9–11 bristles; mesosternum, coxae and the femora with slender bristles;

abdomen beneath finely punctuated, rugulose laterally, with slender bristles laterally and apically.

In the ♂ the pronotum is slightly depressed anteriorly and medially.

Length of ♂ and ♀ to tip of membrane 5·6–6·5 mm.

Breadth of ♂ and ♀ acr. pron. 3–3·3 mm.

Breadth of ♂ and ♀ acr. abd. 3–3·5 mm.

Hab.—Damaraland—Sandup (M. Exp.).
Ovamboland—Otjimbumbe, Kunene R., Namakunde (M. Exp.).

C. lautipennis Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 312.
1864. Stål, Hem. Afr., i, p. 21.
1882. Signoret, Ant. Soc. Ent. Fr., p. 151, pl. vi, fig. 89.

Hab.—Namaqualand—Kuisib area (after Stål).
Damaraland—Walfish Bay (Deutsche-Kolonialgesellschaft).

C. indicus Westwd.

1837. Westwood, Hope Cat., i, p. 19.
1882. Signoret, Ant. Soc. Ent. Fr., p. 28, pl. i, fig. 69.
perosus Stål, Oefv. Vet. Ak. Förh., p. 214, 1853 (*Aethus*).
,, Stål, Hem. Afr., p. 23, 1864.
impressicollis Signoret, Ant. Soc. Ent. Fr., p. 923, 1864 (*Aethus*).
,, Stål, Hem. Afr., i, p. 23, 1864 (*Aethus*).

Hab.—" Deutsch-Südwestafrika " (after Seiner).

Gen. Angra Schum.

1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 4.

Type.—*A. ciliata* Schum.

A. ciliata Schum.

1913. Schumacher, *loc. cit.*

Hab.—Namaqualand—Prince of Wales' Bay (Schultze).

Sub-fam. 5. **Pentatominae** Stål.

Tribe 1. HALYINI Stål.

Gen. Coenomorpha Dall.

1851. Dallas, List, i, p. 191.
1876. Stål, Enum., v, p. 45.

Type.—*C. nervosa* Dall.

C. nervosa Dall. S.A.M.

1851. Dallas, List, i, p. 192.
1864. Stål, Hem. Afr., i, p. 103.

Hab.—Damaraland—Grootfontein, Tsumeb (M. Exp.).
Ovamboland (Eriksson).

Gen. Atelocera L. de Castelnau.

1832. L. de Castelnau, Ess., p. 63.
1835. Dallas, List, i, p. 152.
1876. Stål, Enum., v, p. 46.

Atelocerus Burmeister, Handb., II, i, p. 361, 1835.

Type.—*A. armata* de Castelnau.

A. natalensis Stål. S.A.M.

1853. Stål, Oefv. Vet. Ak. Förh., p. 216.
1864. Stål, Hem. Afr., i, p. 95.

Hab.—Damaraland—Windhuk (M. Exp.), Sandfontein (Gilman), N.-E. Damaraland (Eriksson).
Ovamboland—Omaramba (Eriksson).

A. foveata Dall.

1851. Dallas, List, i, p. 178.
1864. Stål, Hem. Afr., i, p. 97.

lentiginosa Stål, Oefv. Vet. Ak. Förh., p. 216, 1853.
Hab.—" S.-W. Protectorate " (according to Lübbert).
Damaraland—Gobabis (Gentz), Okahandja (Schultze), Outjo (Langheld), Omaheke (v. Trotha), Windhuk (Techow).

A. notatipennis Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 312.
1864. Stål, Hem. Afr., i, p. 97.

Hab.—" Deutsch-Südwestafrika " (after Lindt and Lübbert).
Damaraland—Okahandja (Schultze, Casper), Swakop (Stål), Windhuk (Techow).

A. stictica Westwd. S.A.M.

1837. Westwood in Hope Cat., i, p. 20.
1851. Dallas, List, i, p. 177.

1864. Stål, Hem. Afr., i, p. 94.

Hab.—Damaraland—Gobabis (Dr. Knobel), Waterberg, Windhuk (M. Exp.).
Ovamboland—Omaramba (Eriksson).

Gen. HALYS Fabr.

1803. Fabricius, Syst. Rhyng., p. 103.
1867. Stål, Oefv. Vet. Ak. Förh., p. 510.
1876. Stål, Enum., v, p. 45.

Type.—*H. dentatus* Fabr.

H. clausnitzeri Schum.

1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 57.

Hab.—Damaraland—Tsumeb (Heimann).

Gen. PHRICODUS Spin.

1840. Spinola, Rev. Mag. Zool.
1851. Stål, Hem. Afr., i, p. 91.
1876. Stål, Enum., v, p. 49.

Stenotoma Westwood, Tr. Ent. Soc. Lond., iv, p. 248, 1847.

Type.—*P. hystrix* Germ.

P. hystrix Germ. S.A.M.

1837. Germar in Silberm Rev., v, p. 134.
1840. Spinola, *loc. cit.*, pl. xl.
1849. Signoret, Ann. Soc. Ent. Fr., p. 327, pl. ix, fig. 3.
1864. Stål, Hem. Afr., i, p. 92.

desjardinsi Westwood, Tr. Ent. Lond., iv, p. 249, pl. xviii, fig. 6, 1847.

fasciatus Signoret, Ann. Soc. Ent. Fr., viii, p. 924, 1861.

Hab.—Ovamboland—Onoolonga (M. Exp.).

TRIBE 2. SCIOCORINI Stål.

Gen. EUPODODUS Kirk.

(=PODODUS Am. et Serv.).

1843. Amyot et Serville, Hem., p. 101.
1864. Stål, Hem. Afr., i, p. 124.
1876. Stål, Enum., v, p. 50.
1904. Kirkaldy, Entomologist, p. 280.

Type.—*E. orbicularis* Burmeister.

E. mundus Germ. S.A.M.

1837. Germar in Silberm. Rev., v, p. 183.
1851. Fieber, Rhynch., p. 15.
Hab.—Ovamboland—Omaramba (Eriksson).

E. orbicularis Burm. S.A.M.

1835. Burmeister, Handb., II, i, p. 373.
1843. Amyot et Serville, Hem., p. 101.
1851. Fieber, Rhynch., p. 14.
1864. Stål, Hem. Afr., i, p. 125.
capensis Westwood in Hope Cat., i, p. 18, 1837.
Hab.—Deutsch-Südwestafrika (after Seiner).
Damaraland—Okahandja (Casper), Windhuk (Seewald) and (M. Exp.).
Ovamboland—Omaramba (Eriksson), Mafa (M. Exp.).

Gen. SCIOCORIS Fall.

1829. Fallen, Hem. Suec., p. 20.
1851. Fieber, Rhynch., p. 12.
1872. Stål, Oefv. Vet. Ak. Förh., xxix, p. 35.
1876. Stål, Enum., v, p. 50.
Type.—*S. terreus* Schrank.

S. fuscosparsus Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 312.
1864. Stål, Hem. Afr., i, p. 122.
Hab.—T'kons Fountain, S.-W. Protectorate (after Stål).

TRIBE 3. AEPTINI Stål.

Gen. DYMANTIS Stål.

1861. Stål, Oefv. Vet. Ak. Förh., p. 199.
1864. Stål, Hem. Afr., i, p. 110.
1876. Stål, Enum., v, p. 51.
Type.—*D. plana* Fabr.

D. plana Fabr. S.A.M.

1803. Fabricius, Syst. Rhyng., p. 183.
1839. Herr. Schaeffer, Wanz., v, p. 75, fig. 519.

1864. Stål, Hem. Afr., i, p. 110.
binotata Stål, Oefv. Vet. Ak. Förh., p. 181, 1855.
„ Stål, *ibid.*, p. 55, 1856 (*Paramecocoris*).
Hab.—Ovamboland—Mafa, Namakunde (M. Exp.).

D. subvittata Stål.

1861. Stål, Oefv. Vet. Ak. Förh., p. 200.
1864. Stål, Hem. Afr., i, p. 111.
Hab.—" Deutsch-Südwestafrika " (after Lübbert).

Gen. PRETORIUS Dist.

1898. Distant, Ann. Mag. Nat. Hist., VII, ii, p. 298.
Type.—*P. tibialis* Dist.

P. tibialis Dist. S.A.M.

Hab.—Ovamboland—Mafa, Namakunde (M. Exp.); also Rhodesia—Salisbury (Dr. M. Melle), Inziza (J. French). Transvaal (after Distant).

TRIBE 4. MYROCHEINI Stål.

Gen. DELEGORGUELLA Spin.

(=PARAMECOCORIS Stål.)

1850. Spinola, Mem. Soc. Ital. Modena, xxv, p. 33.
Paramecocoris Stål, Oefv. Vet. Ak. Förh., p. 215, 1853.
„ Stål, *ibid.*, p. 199, 1861.
„ Stål, Enum., v, p. 53, 1876.
Type.—*D. elliptica* Spin.

D. ventralis Germ. S.A.M.

1837. Germar, Silberm. Rev., v, p. 181 (*Cimex*).
1851. Dallas, List, i, p. 134.
1864. Stål, Hem. Afr., i, p. 114.
fatidicus Stål, Oefv. Vet. Ak. Förh., p. 215, 1853.
Hab.—Namaqualand—Kalkfontein (J. Brown).
Ovamboland—Omaramba (Eriksson).

D. vittiventris Stål.

1861. Stål, Oefv. Vet. Ak. Förh., p. 200.
1864. Stål, Hem. Afr., i, p. 114.

Hab.—Damaraland—Okahandja (Casper), "Terr. fluv. Swakop" (after Stål).

TRIBE 5. PENTATOMINI Stål.

Gen. UHLUNGA Dist.

1892. Distant, Ent. Month. Mag., ser. 2, iii, p. 237.

Type.—*U. typica* Dist.

U. typica Dist. S.A.M.

1892. Distant, *loc. cit.*

Hab.—Ovamboland—Omaramba (Eriksson).

U. typica var. *cornuta* nov. S.A.M.

(Pl. II, fig. 2.)

The body ochraceous, densely punctuated; the third and fourth antennal joints, the punctuations on the head, the eyes, the medial longitudinal line and the apex of the rostrum, the anterior margins and apices of the produced posterior lateral pronotal angles, the punctuations on the anterior declined part and those in the foveae posteriorly near the bases of the lateral angles of the pronotum, the punctuations on the scutellum (especially near its apex) on each side of the medial impunctate fascia, the punctuations laterally on each side from the metastethium on to the abdomen below, the basal part of the abdomen above, the dorsal sutures of the segments and an irregular fascia on each side dorsally extending on to the connexivum dark brown; the basal posterior regions of the posterior lateral angles above and below, the costal and subapical parts of the coria and the superior surfaces on the tibiae pale testaceous; the membrane light brownish yellow; alae opalescent hyaline.

The head large, rounded in front, with the lateral lobes as long as the medial one and touching at the apex, and the antenniferous tubercles visible from above; the first antennal joint short, incrassate, not reaching the apex of the head, the second long, about as long as the head, the third and fourth shorter, subequal; rostrum long, slender, extending to about the base of the fourth abdominal segment below, with the first and second joints subequal, the third much longer, and the fourth much shorter than the third, but slightly longer than the second; pronotum together with the head steeply declined in front, about twice as broad as long, with the posterior lateral angles acutely produced horizontally and slightly forwards; scutellum with its base roundly elevated; mesosternum longitudinally prominently carinate; abdomen broad, flat and disc-like, broader than the hemelytra, with the apices of the sixth abdominal segment (♀) acutely pointed, with the apical margin of the genital segment truncated.

Length, ♀ to tip of membrane 6½ mm.

Breadth, ♀ acr. pron. 4 mm.

Breadth, ♀ acr. abd. 4 mm.

Hab.—Ovamboland—Omaramba (Eriksson).

The ♀ specimen does not differ in specific characters from the ♀ specimen of *U. typica* in our collection. The only differential character seems to be the acutely and characteristically produced posterior lateral angles. As this is not sexual it is most likely a variation from the type.

Gen. MECIDEA Dall.

1851. Dallas, List, i, p. 139.
1864. Stål, Hem. Afr., i, p. 132.
1876. Stål, Enum., v, p. 37.

Cerataulax Signoret, Ann. Soc. Ent. Fr., p. 335, 1851.

Type.—*M. indica* Dall.

M. linearis Dall. S.A.M.

1851. Dallas, *loc. cit.*, p. 139.

Hab.—Damaraland—Grootfontein, Narebis, Otjituo, Tsumeb and Waterberg (M. Exp.).
Ovamboland—Namakunde, Otjimbumbe, Kenene R., Ongandjera (M. Exp.).

Gen. TROPICORYPHA Mayr.

1864. Mayr, Verh. Zool. Bot. Ges. Wien., xiv, p. 190.
1866. Mayr, Reis. Nov. Hem., p. 59.
1876. Stål, Enum., v, p. 73.

Type.—*T. bifida* Thb.

T. denticollis Bredd.

1913. Breddin (Schumacher, Denkschr. Ges. Jena., xvii, p. 53).

Hab.—Namaqualand—Prince of Wales' Bay (Schultze).

Gen. HALYDICORIS Jeannel.

(=HALYOMORPHA Mayr.)

1913. Jeannel, Voy. de Ch. Alluaud, 1911–12. No. 1. Pentatomidae.

Type.—*H. pretoriae* Dist.

H. capitata Dist. S.A.M.

1892. Distant, Nat. in Transvaal, Append., p. 249, t. iii, fig. 3.

Hab.—Damaraland—Tsumeb (M. Exp.).

Gen. HEGELOCHUS Stål.

1876. Stål, Enum., v, p. 76.

Type.—*H. tristiculus* Stål.

H. tristiculus Stål.

1864. Stål, Hem. Afr., i, p. 159.

Hab.—Damaraland—" Terr. fluv. Swakop " (after Stål).

Gen. ANDOCIDES Stål.

1876. Stål, Enum., v, p. 76.

Type.—*A. vittaticeps* Stål.

A. vittaticeps Stål.

1864. Stål, Hem. Afr., i, p. 159.

Hab.—Damaraland.—" Terr. fluv. Swakop " (after Stål).

Gen. VETERNA Stål.

1864. Stål, Hem. Afr., i, p. 153.
1876. Stål, Enum., v, p. 76.

Type.—*V. sanguineirostris* Thb.

V. imitatrix n. sp.

(Pl. I, fig. 4.) S.A.M.

The body dull olive green above, paler below ; the antennae, the upper surface of the head, the ocelli, the two longitudinal, medial, obscure fasciae at the base, and a subapical spot on each side of the scutellum, the clavus, the basal part of the corium, an apical spot near the inner angle, an intramarginal oblong spot near the outer apical angle and an obscure central spot on the corium, some spots on the membranal veins, a broad medial fascia on the dorsal surface of the abdomen, the connexivum, the broad lateral abdominal regions beneath, the genital segment (♂), the small spots on the femora especially near their apices, the small spots on the tibiae, the apices of the tibiae and the tarsi reddish brown ; the apices of the second, third, fourth, and fifth antennal joints, the eyes, the obscure medial part of the head, the longitudinal line and the apex of the rostrum, a transverse fascia on each side of the pronotum, the apices and the posterior basal parts of the produced posterior lateral angles, an obscure lateral longitudinal fascia near the posterior angles and the basal parts of the pronotum, infusions to the clavus, a broad lateral fascia on each side and some medial spots on the sutures on the abdomen above, the basal and apical angles of the segments on the connexivum and the spiracles black ; the anterior and ventral basal surfaces of the posterior lateral angles orange red ; the third, fourth, and fifth antennal joints and the narrow basal part of the head infused with red ; the anterior pronotal callosities, the lateral margins, an obscure medial longitudinal fascia traversing the pronotum and the scutellum, the lateral basal parts and the apex of the scutellum, the basal costal part and the medial costal part of the corium, the under surface of the head, the mesosternum and a broad obscure fascia across the pectoral region yellowish white ; the callous spots on the clavus and corium, some obscure lateral spots on the abdomen beneath, the coxae and the extreme bases of the femora greenish white ; the membrane hyaline and the ventral surface of the abdomen dull bluish white or " slate " colour.

The head triangular, slightly shorter than the pronotum, with the lateral lobes as long as the medial one, with the sides slightly sinuate beyond the eyes, with the medial part punctuated and the rest rugulose and punctuated, with the antenniferous tubercles visible from above ; the first antennal joint short, not reaching the apex of the head, the second joint the longest, the third and fourth equal, but shorter than the second, slightly longer than the fifth; rostrum extending over the base of the third abdominal segment, with the second joint the longest and the third and fourth subequal; pronotum about three times as broad as long, declined anteriorly, with the anterior and lateral margins sinuate, the posterior lateral angles prominent and horizontally produced, with the surface coarsely punctate and transversely rugulose; scutellum broad, triangular, convex at the base, transversely rugulose and pitted postero-laterally and apically, with its sides slightly sinuate beyond the middle; clavus and corium with irregular callous spots and dense punctuations; the membrane extending slightly beyond the abdomen; lateral pectoral, abdominal, and under surfaces of the head feebly punctate; abdomen broader than hemelytra; tibiae sulcated on their superior surfaces.

This species is allied to *V. mimica* of Distant, from which it differs by the more declined head, the longer pronotum, the broader, less acutely produced, horizontal, posterior lateral angles, the broader scutellum, the longer rostrum, etc.

Length, ♂ 11 mm.
Breadth, ♂ acr. pron. 7 mm.
Breadth, ♂ acr. abd. 6 mm.
Hab.—Damaraland—Narebis (M. Exp.).

V. pugionata Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 313.
1864. Stål, Hem. Afr., i, p. 156.

Hab.—Damaraland—" Eikhams " (=Windhuk, after Stål).

Gen. CAURA Stål.

1864. Stål, Hem. Afr., i, p. 168.
1876. Stål, Enum., v, p. 77.

Type.—*C. pugillator* Fabr.

C. rufiventris Germ. S.A.M.

1837. Germar, Silberm. Rev., v, p. 167.
1844. Herr. Schaeffer, Wanz., vii, p. 96, fig. 757.
1864. Stål, Hem. Afr., i, p. 169.

Hab.—Damaraland—N.-E. Damaraland (Eriksson), Namutoni-Outjo (Seewald).

Gen. DIPLOXYS Am. et Serv.

1843. Amyot et Serville, Hem., p. 138.
1864. Stål, Hem. Afr., i, p. 126.
1872. Stål, Enum., v, p. 78.

Ancyrocoris Mayr, Verh. Zool. Bot. Ges. Wien., xiv, p. 911, 1864.

Type.—*D. acanthura* Westwd. (=*Senegalensis* Am. et Serv.).

D. bipunctata Am. et Serv. S.A.M.

1843. Amyot et Serville, *loc. cit.*
1864. Stål, Hem. Afr., i, p. 128.

bimaculata Stål, Oefv. Vet. Ak. Förh., p. 134, 1858 (*Gonopsis*).
Hab.—Ovamboland—Namakunde (M. Exp.).

D. fallax Stål. S.A.M.

1864. Stål, *loc. cit.*, p. 129.

Hab.—Ovamboland—Kachipu, Kunene R., Onoolonga (M. Exp.).

Gen. AELIOMORPHA Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 313.
1864. Stål, Hem. Afr., i, p. 173.
1876. Stål, Enum., v, p. 79.

Tetratoma Signoret, Ann. Soc. Ent. Fr., p. 339, 1851.

Type.—*A. simulans* Stål.

A. bella Stål. S.A.M.

1853. Stål, Oefv. Vet. Ak. Förh., p. 217.
1864. Stål, Hem. Afr., i, p. 173.

Hab.—Ovamboland—Mafa, Namakunde (M. Exp.), Omaramba (Eriksson).

A. petulca n. sp. S.A.M.

(Pl. I, fig. 7.)

The body olivaceous to brownish ochraceous above, with a feeble metallic lustre, densely covered with dark brown punctuations; the medial part of the head, the lateral margins, an intramarginal fascia on each side on the under surface (extending from the eyes to the apex), sometimes part of the first antennal joint, the apices of the fourth and fifth joints, the apex of the rostrum, four longitudinal fasciae on the anterior part of the pronotum, one near the medial line and one intramarginally on each side, four short oblique basal fasciae on the scutellum, one in each basal angle and one on each side at the base of the central triangular, darkly punctuated part and a short subapical fascia on each side of the central line, the clavus, the basal contiguous part and the apical region near the inner apical angle on the corium, a lateral fascia on each side on the under surface (extending across the pectoral and lateral abdominal regions), some punctuations above the acetabula, the sternum, a medial longitudinal ventral fascia on the abdomen, and the basal and apical margins of the segments on the connexivum black; a central longitudinal line traversing part of the head, the pronotum, and the scutellum, the narrow anterior and the broader lateral pronotal margins, two longitudinal fasciae one on each side across the anterior callosities on the pronotum, the callosities near the basal angles and a broad lateral fascia on each side of the scutellum, the broad costal region of the corium, an interrupted fascia across the pectoral and lateral abdominal regions yellowish white; the legs yellowish white to yellowish brown, with the apices of the tibiae and the tarsi darker.

The head large, convex, arched, about as long as or slightly shorter than the pronotum, with the lateral lobes as long as the medial one, with their sides distinctly sinuate beyond the eyes; ocelli far apart; the rostrum extending slightly beyond the posterior coxae, with the second joint longer than the first, the third and fourth subequal and shorter than the second; pronotum about twice as broad as long, medially slightly transversely depressed, with the anterior margin sinuate, the lateral margins straight, and the posterior lateral angles not prominent, rounded; scutellum large, triangular, slightly convex at the base, with its apex comparatively broad; hemelytra slightly narrower than the abdomen, with the costal margin not straight, slightly curved, and the membrane extending slightly beyond the abdomen; under surface of the body less densely punctuated than upper surfaces; the antennae, the rostrum, the genital segment and the legs finely pilose.

♂. Small; antennae incrassate, the second joint very short, the third, fourth, and fifth about equal in length; the head and pronotum together convex, gracefully arched; the scutellum visibly depressed beyond the middle; opaque lateral abdominal patches absent.

Length, 6–6·6 mm.

Breadth, 3·5–4 mm.

♀. Larger; antennae slender, the second joint longer, the third slightly shorter than the fourth and fifth equal joints ; the head and pronotum less gracefully arched.

Length, 7–7·5 mm.

Breadth, 4–4·5 mm.

Hab.—Damaraland—Nagusib (M. Exp.) ; also
Cape Province—Seymour (Peringuey).
Natal—Scottburgh (Barnard).
S. Rhodesia—Bulawayo (Tucker).

A. semiviridis n. sp. S.A.M.

(Pl. I, fig. 8.)

The body oblong, dull greenish to greenish ochraceous above, densely punctuated (except for part of the pectoral region, the sternum and a medial longitudinal band on the abdomen below) ; the medial basal part of the head, the medial lobe, the lateral margins of the lateral lobes, the eyes, a broad medial longitudinal fascia (often indistinct), and the lateral margin of the pronotum, a broad fascia on each side of the central levigate line on the scutellum, the basal part of the clavus, the basal subcostal part of the corium, the connexivum, a lateral fascia on each side of the body beneath, and often the medial, ventral, basal part of the abdomen dark dull green to greenish ochraceous ; the first and second antennal joints, a fascia laterally on the head and continuous on each side with a fascia on the pronotum, the basal angles and the subapical lateral parts on the scutellum, the greater part of the corium, a callous fascia across the pectoral regions, the lateral parts of the abdomen and the greater part of the ventral surface, the acetabula, the sternum and coxae pale greenish yellow to greenish white ; an obscure longitudinal pronotal line, a distinct central line on the scutellum and some lines on the corium pale greenish white ; the small spots on the second and third antennal joints, the apex of the third joint, the fourth and fifth joints, the ocelli, a medial longitudinal line and the apex of the rostrum, the apical part of the clavus, the inner apical angle and apical margin of the corium, the veins on the membrane, the spots arranged more or less in a transverse row on each segment and the punctuations on the abdomen below, the basal superior surfaces of the coxae, the greater part of the ventral surfaces and small spots on the femora and tibiae, the apices of the tibiae and the tarsi dark brown to testaceous ; the membrane vitreous, and the punctuated dorsal surface of the abdomen deep dark brown.

The head large, slightly convex, slightly shorter than the pronotum, with the lateral lobes as long as the medial lobe, with their sides slightly sinuate beyond the eyes; the ocelli separated about three times their distance from the eyes, with a circular, impunctate, callous spot between each ocellus and eye; the antenniferous tubercles with a blunt outwardly directed spine; the first antennal joint short, not reaching the apex of the head, the second slightly longer, the third the longest, and the fourth and fifth of about equal length; the rostrum extending a little beyond the posterior coxae, the first and second joints about equal, the third slightly shorter but longer than the fourth; pronotum a little less than twice as broad as long, with the anterior margin sinuate and the lateral margins straight, with the posterior lateral angles rounded, not prominent; scutellum broad, with its sides sinuate at the middle; hemelytra narrower than the abdomen, with the costal and apical margins of the corium curved, and the membrane reaching the apex of the abdomen; pro-, meso-, and metastethia with small callous spots; mesosternum feebly carinate; the antennae, the apex of the head, the bucculae, the mesosternum, the abdomen below, the genital segment and the legs finely pilose.

Length, ♀ 9–10 mm.

Breadth, ♀ 4·5–4·6 mm.

Hab.—Damaraland—Otjiwarongo (M. Exp.); also
Transvaal—Junction of Crocodile and Marico Rivers (Tucker).

A. simulans Stål. S.A.M.

1858. Stål, Oefv. Vet. Ak. Förh., p. 313.
1864. Stål, Hem. Afr., i, p. 175.

Hab.—Damaraland—Gaub (M. Exp.).
Ovamboland — Omaramba (Eriksson), Otjimbumbe, Kunene R. (M. Exp.).

Gen. EYSARCORIS Hahn.

1834. Hahn, Wanz., ii, p. 66.
1864. Stål, Hem. Afr., i, p. 135.
Eusarcoris Puton, Cat., p. 11, 1886.
Analocus Stål, Gen. Pent., p. 37, 1872.
Stollia Ellenrieder, Nat. Tydschr. Ned. Ind., xxiv, p. 149, 1862.
,, Stål, Oefv. Vet. Ak. Förh., p. 510, 1867.
,, Stål, Enum., v, p. 81, 1876.

Type.—*E. aeneus* Scop.

E. nigripectus n. sp. S.A.M.

(Pl. I, fig. 9.)

Body above dull ochraceous or greyish ; the head, the pronotum, the scutellum, the clavus and corium, the abdomen above, the connexivum, the under surface of the head, the pectoral and lateral abdominal regions darkly and densely punctuated ; the margins of the lateral lobes, the basal ocular regions, the lateral under surfaces of the head, the medial line and the apex of the rostrum, the narrow anterior pronotal margin, the two hammer-shaped callosities on the pronotum, three obscure spots on the scutellum (two laterally and slightly beyond the middle and one apically), a broad lateral fascia extending from behind the eyes across the pro-, meso- and metastethia on to the basal lateral part of the abdomen, some small segmental spots near the spiracles, the sternum, the basal medial part, and a large spot medially on the sixth segment of the abdomen beneath black, with a submetallic lustre ; the antennae, the basal margins of the eyes, a small callous spot behind each eye, the rostrum, the lateral margins and anterior medial region of the pronotum, the basal costal part of the corium, the upper dorsal margin of the prostethium, a small callous area near the upper margin of the metastethium, the odoriferous areas and the acetabula (in part), and the abdomen beneath pale yellowish white ; the legs darker, more yellowish, and the apex of the fourth antennal joint, the fifth joint, the obscure subapical spots on the under surfaces of the femora, the basal superior surfaces of the tibiae, and the numerous small spots on both the femora and the tibiae dark brown ; the ocelli red and the membrane transparent hyaline.

The head large, triangular, subtruncated anteriorly, with the lateral lobes as long as the medial one, their sides slightly sinuate beyond the eyes ; ocelli widely separated ; the first antennal joint short, not reaching the apex of the head, the second and third slender, subequal, slightly longer than the first, the fourth longer, feebly clavate apically, the fifth slightly shorter than the fourth, incrassate and fusiform ; the rostrum extending slightly beyond the posterior coxae, with the first joint extending a little posterior to the bucculae, the second joint considerably longer, about twice the length of the two last subequal joints together ; pronotum about twice as broad as long, with the anterior part steeply declined and slightly convex, the anterior margin deeply sinuate, the lateral margins feebly so, the anterior lateral angles obtuse, the posterior lateral angles rounded ;

scutellum broad, about as long as broad basally, with the lateral margins sinuate just before the middle, more or less parallel beyond it; hemelytra slightly narrower than the abdomen; corium about as long as the scutellum; the membrane extending a little beyond the abdominal apex; the antennae, the anterior part of the head, the rostrum, the punctuations on the lateral pronotal regions, those on the scutellum and coria, the sternum, the abdomen below, the genital segment and the legs finely pilose.

Length, ♀ 6·3 mm.

Breadth, ♀ 4 mm.

Hab.—Damaraland—Narebis (M. Exp.).

Gen. Carbula Stål.

1864. Stål, Hem. Afr., i, p. 140.
1876. Stål, Enum., v, p. 82.

Type.—*C. decorata* Sign.

C. marginella Thb. S.A.M.

1822. Thunberg, Hist. Rostr., cap. ii, p. 4.
1864. Stål, Hem. Afr., i, p. 144.

Hab.—Damaraland—Gaub, Otjituo, Tsumeb, Waterberg (M. Exp.).

Gen. Gynenica Dall.

1851. Dallas, List, i, p. 180.
1876. Stål, Enum., v, p. 83.

Type.—*G. marginella* Dall.

G. marginella Dall. S.A.M.

1851. Dallas, *loc. cit.*

Hab.—Damaraland—Waterberg (M. Exp.).

Gen. Durmia Stål.

1864. Stål, Hem. Afr., i, p. 146.
1876. Stål, Enum., v, p. 84.

D. lutulenta Stål. S.A.M.

1853. Stål, Oefv. Vet. Ak. Förh., p. 220.
1864. Stål, Hem. Afr., i, p. 151.

Hab.—Damaraland—Windhuk (M. Exp.).

Gen. AGONOSCELIS Spin.

1837. Spinola, Essai, p. 327.
1864. Stål, Hem. Afr., i, p. 177.
1876. Stål, Enum., v, p. 84.

Nevroscia Amyot et Serville, Hem., p. 109, 1843.

Type.—*A. nubila* Fabr.

A. erosa Westwd. S.A.M.

1837. Westwood in Hope Cat., i, p. 33.
1864. Stål, Hem. Afr., i, p. 179.
1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 55, var. nov. *atropurpurea*, from Namutoni-Outjo (Seewald).

Hab.—Damaraland—Gaub (M. Exp.), Tsumeb (Heimann).

A. puberula Stål. S.A.M.

1853. Stål, Oefv. Vet. Ak. Förh., p. 216.
1864. Stål, Hem. Afr., i, p. 179.

Hab.—Damaraland—Gobabis (Beetz), Narebis, Otjituo (M. Exp.), Okahandja (Casper), Windhuk (Techow, Rolle).
Ovamboland—Nomtele (M. Exp.).

A. versicolor Fabr. S.A.M.

1794. Fabricius, Ent. Syst., iv, p. 120.
1803. Fabricius, Syst. Rhynch., p. 175.
1864. Stål, Hem. Afr., i, p. 178.

pubescens Thunberg, Hist. Rostr., cap. ii, p. 2, 1822.
gambiensis Westwood in Hope Cat., p. 32, 1837.
infuscata Westwood, *ibid.*, p. 32, 1837.
acinorum Germar, in Silberm. Rev., v, p. 177, 1837.
„ Herr. Schaeffer, Wanz. Ins., vii, p. 105, fig. 759, 1844.
rostrata Fabricius, Harold, Mitt. Münch. Ent., ser. iii, 1879.
Hab.—Damaraland—Omaruru (Volkmann), Waterberg (M. Exp.).
Ovamboland—Ukualonkathi (M. Exp.).

Gen. STENOZYGUM Fieb.

1861. Fieber, Europ. Hem., p. 345.
1867. Stål, Oefv. Vet. Ak. Förh., p. 520.

1876. Stål, Enum., v, p. 86.

Minodia Mulsant et Rey, Pentat., p. 199, 1866.
Strachia Walker, Cat. Hem., pp. 2 and 3, 1867–68.

Type.—*S. variegatum* Fieb.

S. alienatum Fabr. S.A.M.

1803. Fabricius, Syst. Rhynch., p. 173.
1864. Stål, Hem. Afr., i, p. 184.

elegans Pal. Beauvois, Ins., p. 113, Hem., pl. viii, fig. 5, 1805.
Hab.—Ovamboland—Omaramba (Eriksson).

S. sanguineiventris n. sp. S.A.M.

(Pl. III, fig. 1.)

Body black, with a bluish metallic lustre ; the posterior half of the pronotum, the middle of the scutellum, the clavus and the corium, the connexivum above and the posterior apical parts of the pro-, meso- and metastethia punctuated ; the lateral margins of the medial lobe, a crescent-shaped spot in front of each ocellus, four spots in a transverse row on the anterior lobe of the pronotum, a short marginal fascia on each side near the posterior lateral angles on the posterior margin, a large callous spot near each basal angle and a large apical spot on the scutellum, part of the transverse oblique subapical fascia on the corium, some obscure spots on the edges of the bucculae, the basal part of the second rostral joint, an interrupted fascia across the acetabula, two spots on the mesostethium, one in the basal upper angle, and the other in the apical upper angle, the posterior apical angle of the metastethium, the narrow fasciae on the upper, lateral, and under surfaces of the intermediate and posterior femora, the three or four apical spots on all the femora, an obscure longitudinal fascia on the superior surfaces of the intermediate and posterior tibiae and the apical superior spot on all the tibiae yellowish white ; a spot on each lateral lobe on the head, the part of the reflected anterior pronotal margin behind each eye, the fascia in front of and on the anterior part of the posterior lateral angles, the interrupted medial longitudinal fascia, and a spot on each side near the anterior lateral angles of the pronotum, an irregular medial spot on the scutellum, the narrow costal basal part, a spot near the middle and a posterior subapical transverse fascia on the corium, the apical parts of the connexivum, the dorsal surface of the abdomen (except for the black lateral margins), a spot on each side on the under surface of the antenniferous tubercle, the anterior and upper dorsal margins of the prostethium, two small spots, one at the middle of the prostethium and the other at the middle of the mesostethium and the apical parts of the coxae orange; the broad lateral interrupted fascia on each side and the medial basal part of the abdomen beneath partly scarlet-red and partly deep yellowish red; the membrane and alae brown, and the genital segment black.

The head broad, together with the eyes very slightly broader than the anterior part of the pronotum, with the anterior lateral lobes slightly shorter than the medial one, their margins reflected, slightly sinuate beyond the eyes; the eyes transversely pedunculate; upper surface of head (except for a few punctuations) smooth; the first antennal joint short, very nearly touching the apex, the second slightly longer, shorter than the third, the fourth incrassate, longer than the third, the fifth incrassate, fusiform, about as long as the second; the rostrum extending slightly beyond the intermediate coxae, with the second joint longer than the first, slightly shorter than the two apical subequal ones together; pronotum about as long as the head, twice as broad as long, medially transversely depressed, with the margins of the anterior lobe reflected upwards, slightly sinuate anteriorly and laterally, the posterior lobe transversely coarsely punctate along grooves, the posterior lateral angles rounded, not prominent; scutellum triangular, basally slightly convex and feebly punctate, transversely medially coarsely punctate and rugulose; hemelytra slightly narrower than the abdomen; the coria rugulose, coarsely punctate along the costal and claval margins; the membrane extending slightly beyond the abdomen; anterior tarsi a little more than half as long as the tibiae.

Length, ♂ 6·5 mm.

Breadth, ♂ 3·5 mm.

Hab.—Damaraland—Narebis (M. Exp.).

S. senegalense Fabr. S.A.M.

1803. Fabricius, Syst. Rhynch., p. 179.
1876. Stål, Enum., v, p. 86.

gloriosum Westwood in Hope Cat., i, p. 34, 1837.
,, Stål, Hem. Afr., i, p. 185, 1864.
musivum Germar in Silberm. Rev., v, p. 176, 1837.
,, Herr. Schaeffer, Wanz., vii, p. 84, fig. 751, 1844.

Hab.—Ovamboland—Omaramba (Eriksson).

S. varium Westwd. S.A.M.

1837. Westwood in Hope Cat., i, p. 34.
1864. Stål, Hem. Afr., i, p. 186.
angulare Schaum, Ber. Ak. Berl., p. 357, 1853 ; Peters, Reis. Ins., p. 39, pl. ii, fig. 3, 1862.
Hab.—Damaraland—Namutoni-Outjo (Seewald).
Ovamboland—Nomtele (M. Exp.), "Ovamboland" (Eriksson).

Gen. BAGRADA Stål.

1862. Stål, Stett. Ent. Zeit., xxiii, p. 105.
1872. Stål, Oefv. Vet. Ak. Förh., xxix, iii, p. 39.
1872. Stål, Enum., v, p. 88.
Nitilia Mulsant et Rey, Pentat., p. 197, 1866.
Type.—*B. picta* Fabr.

B. hilaris Burm. S.A.M.

1835. Burmeister, Handb., II, i, p. 368.
1864. Stål, Hem. Afr., i, p. 187.
hebraica Germar in Silberm. Rev., v, p. 177, 1837.
picta Herr. Schaeffer, Wanz., v, p. 64, fig. 508, 1839.
jucunda Klug, Symb., v, pl. xliv, fig. 6, 1845.
Hab.—Namaqualand—Keetmanshoop (Schultze).
Damaraland—Gaub, Tsumeb (M. Exp.), Windhuk (Rehbock).
Ovamboland—Omaramba (Eriksson).

Gen. DISMEGISTUS Am. et Serv.

1843. Amyot et Serville, Hem., p. 99.
1864. Stål, Hem. Afr., i, p. 27.
1876. Stål, Enum., v, p. 21.
Type.—*D. fimbriatus* Thb.

D. fimbriatus Thb. S.A.M.

1783. Thunberg, Nov. sp. Ins., i, p. 47, pl. ii, fig. 61.
1822. Thunberg, Hist. Rostr., cap. iii.
1864. Stål, Hem. Afr., i, p. 28.
circumcinctus Hahn, Wanz., ii, p. 115, fig. 195, 1834.
,, Amyot et Serville, Hem., p. 99, 1848.
Hab.—Ovamboland (coll. Eriksson).

D. rufomarginatus n. sp. S.A.M.

(Pl. I, fig. 5.)

Body elongate, oval, slightly convex above, black and shining; the ocelli, the broad, lateral, ampliated margins and the posterior lateral angles of the pronotum, more than half of the broad costal margin, the claval margin (obscurely so) and an obscure spot near the inner apical angle of the corium, the connexivum above and below, the upper dorsal part of the prostethium, the upper apical angle of the metastethium, the basal medial part of the abdomen beneath, and the apical margins of the coxae red.

The head directed downwards, with the lateral lobes slightly reflected upwards, contiguous in front, longer than the medial lobe, with the surface finely punctuated anteriorly; the antennae slightly compressed from the second joint, the first joint short, slightly incrassate, reaching slightly over the apex, the second, fourth, and fifth of about equal length, the third shorter, but longer than the first; the rostrum reaching the intermediate coxae (♀) or the posterior coxae (♂), the first joint very short, the second slightly incrassate, a little longer than the first, the third about as long as the first and second together, the fourth slightly shorter than the second; pronotum large, slightly declined in front, with the lateral margins ampliated, slightly reflected upwards, punctuated anteriorly, anterolaterally on the ampliated margins and transversely across the middle, the anterior margin slightly sinuate, the lateral margins convexly rounded; scutellum longer than broad, basally transversely grooved, basally slightly convex, subcarinate apically, apex directed downwards; hemelytra as broad as the abdomen beyond the middle, with the basal costal margin slightly ampliated and reflected upwards; clavus and corium densely punctuated; body underneath feebly punctuated; the anterior tibiae subtriangular, slightly dilated apically; tarsi long, with the first joint about as long as the apical ones together.

♂ smaller than ♀.

Length, ♂ 8·5 mm.; ♀ 12·3 mm.

Breadth, ♂ acr. pron. 5·5 mm.; ♀ 7·5 mm.

Breadth, ♂ acr. abd. 6 mm.; ♀ 8 mm.

Hab.—Damaraland—Grootfontein (M. Exp.), Windhuk.

This species is allied to *fimbriatus* Thb., from which it differs by the larger size, the more elongate oval shape, the more ampliated lateral pronotal margins, the practically impunctate under surface and the slightly different arrangement of the red pigment on the pronotum and corium.

Gen. NEZARA Am. et Serv.

1843. Amyot et Serville, Hem., p. 133.
1872. Stål, Enum., ii, p. 40.
1776. Stål, *ibid.*, v, p. 91.

Rhaphigaster Dallas, List, i, p. 274, 1851.
Acrosternum Fieber, Europ. Hem., pp. 79 and 331, 1861.
Sub-gen. *Pellaea* Stål, Enum., ii, p. 40, 1872.

Type.—*U. viridula* Linn.

N. prunasis Dall. S.A.M.

1851. Dallas, List, i, p. 279.

Hab.—Damaraland—Narebis (M. Exp.).

N. viridula Linn. S.A.M.

1758. Linnaeus, Syst. Nat., ed. 10, p. 444.
1775. Fabricius, Syst. Ent., p. 710.
1803. Fabricius, Syst. Rhyng., p. 166.
1864. Stål, Hem. Afr., i, p. 193.
1872. Stål, Enum., ii, p. 41.
1890. Sharp, Tr. Ent. Soc. Lond., pl. xiii, figs. 11 and 12, p. 406.

smaragdula Fabricius, Syst. Ent., p. 711, 1775.
,, Gmelin, Syst. Nat., i (4), p. 2153, 1788.
,, Amyot et Serville, Hem., p. 144, 1843.
,, Fieber, Europ. Hem., p. 330, 1861.
prasina Dallas, List, i, p. 274, 1851.
,, Mulsant et Rey, Pentat., p. 295, 1866.
spirans Fabricius, Ent. Syst. Suppl., p. 533, 1798.
viridissima Wolff, Icon., p. 55, pl. vi, fig. 52, 1801.
variabilis de Villiers, Ent. Auct., pp. 28, 505, 1789.
unicolor, subsericea, leii, tripunctigera, proxima, chinensis, chloris, chlorocephala, propinqua, berylina Westwood in Hope Cat., p. 38, 1837.
plicaticollis Lucas, Expl. Alg. Ins., p. 87, 1849 ; Hem., pl. iii, fig. 9.
hemichloris Germar in Silberm. Rev., v, p. 166.
orbis Stål, Oefv. Vet. Ak. Förh., p. 221, 1853.
approximata Reiche et Fairmaire, Voy. Abyss. Ins., p. 443, 1847.
viridis Scott, Ann. Mag. Nat. Hist., 4, vol. xiv, p. 290.
var. *torquata* Fabricius, Syst. Ent., p. 711, 1775.

Hab.—Damaraland—Nuragas (M. Exp.), Grootfontein (Volkmann), Okahandja (Dinter), Gobabis (Beetz), Namutoni-Grootfontein (Seewald).

Gen. PLATACANTHA Herr. Schf.

1844. Herr. Schaeffer, Wanz., vii, p. 14.
1864. Stål, Hem. Afr., i, p. 199.
1876. Stål, Enum., v, p. 95.

Type.—*P. lutea* Westwd.

P. lutea Westwd.

1837. Westwood in Hope Cat., i, p. 31.
1864. Stål, Hem. Afr., i, p. 199.

transversalis Westwood in Hope Cat., i, p. 31, 1837.
cerea Germar in Silberm. Rev., v, p. 161, 1837.
,, Herr. Schaeffer, Wanz., vii, p. 124, fig. 740, 1844.
Hab.—Damaraland—Okahandja (Peters), Windhuk (Techow).

Gen. ANTESTIA Stål.

1864. Stål, Hem. Afr., i, p. 200.
1855. Stål, Oefv. Vet. Ak. Förh., p. 514.
1876. Stål, Enum., v, p. 95.

Type.—*A. maculata* Dall.

A. maculata Dall. (=*lymphata* Kirk.).

1851. Dallas, List, i, p. 241.
1864. Stål, Hem. Afr., i, p. 200.

Hab.—" Deutsch-Südwestafrika " (after Lübbert).

A. subconcolor Bredd.

1913. Breddin (Schumacher, Denkschr. Ges. Jena, xvii, p. 56).

Hab.—" Deutsch-Südwestafrika " (after Schultze).

A. variegata Thb. S.A.M.

1783. Thunberg, Nov. Ins. sp., ii, p. 48, pl. ii, fig. 62.
1822. Thunberg, Hem. Rostr., cap. ii, p. 3.

1864. Stål, Hem. Afr., i, p. 202.
Hab.—Ovamboland—Omaramba (Eriksson).

Gen. MENIDA Motsch.

1861. Motschulsky, Etud., x, p. 23.
1876. Stål, Enum., v, p. 97.

Stromatocoris Jakowleff, Bull. Mosc., p. 92, 1876.

Type.—*M. violacea* Motsch.

M. decoratula Stål. S.A.M.

1853. Stål, Oefv. Vet. Ak. Förh., p. 222.
1864. Stål, Hem. Afr., i, p. 207.

scurrilis Stål, Oefv. Vet. Ak. Förh., p. 222, 1853.
Hab.—Damaraland—Otjituo (M. Exp.).
Ovamboland (coll. Eriksson).

Gen. PIEZODORUS Fieb.

1861. Fieber, Europ. Hem., pp. 78 and 329.
1872. Stål, Enum., ii, p. 44.
1876. Stål, *ibid.*, v, p. 100.

Type.—*P. incarnatus* Germ.

P. purus Stål. S.A.M.

1853. Stål, Oefv. Vet. Ak. Förh., p. 221.
1864. Stål, Hem. Afr., i, p. 198 (*Nezara*).

Hab.—Damaraland—Gobabis (Beetz), Kabus, Kalau (v. Hofe), Kumutabis (Borrh), Gaub, Namutoni, Narebis, Otjituo, Otjiwarongo, Tsumeb, Windhuk (M. Exp.), Tsumeb (Köchig).
Ovamboland—Kunene R., Nomtele (M. Exp.).

P. pallescens Germ.

1837. Germar in Silberm. Rev., v, p. 175.
1864. Stål, Hem. Afr., i, p. 198.

flavulus Stål, Oefv. Vet. Ak. Förh., p. 221, 1853.
Hab.—" Deutsch-Südwestafrika " (after Seiner).

Sub-fam. 6. **Asopinae (Amyoteinae)** Dall.

TRIBE ASOPARIA Schout.

Gen. DORYCORIS Mayr.

1864. Mayr, Verh. Zool. Bot. Ges. Wien., xiv, p. 906.
1870. Stål, Enum., i, p. 36.
1905. Schouteden, Rhynch. Aethiop., i, fasc. 2, p. 134.
Claudia Stål, Hem. Afr., i, pp. 63 and 74, 1864.

Type.—*D. pavoninus* Westwd.

D. pavoninus Westwd. S.A.M.

1837. Westwood in Hope Cat., i, p. 39.
1864. Stål, Hem. Afr., i, p. 75.
fuscosus, annulipes Germar, Silberm. Rev., v, p. 187, 1837.
bronzeus Westwood in Hope Cat., i, p. 40, 1837.
perornatus Walker, Cat. Het., iii, p. 567, 1868.
Hab.—Damaraland—Okahandja (Casper), Otjiwarongo, Tsumeb (M. Exp.).

Gen. AFRIUS Stål.

1870. Stål, Enum., i, p. 44.
Canthecona Stål, Hem. Afr., i, p. 62, 1864.
,, Schouteden, Rhynch. Aethiop., i, fasc. 2, p. 141, 1905.

Type.—*A. purpureus* Westwd. (*figuratus* Germ.).

A. purpureus Westwd. S.A.M.

1837. Westwood in Hope Cat., i, p. 43 (*Pentatoma*).
coerulea, marginella Dallas, List, i, Hem., p. 89, 1851 (*Canthecona*).
purpurea Schouteden, Rhynch. Aethiop., i, fasc. 2, p. 146, 1905 (*Canthecona*).
yolofa Guerin, Icon. Reg. An. Ins., p. 344, pl. 55, fig. 2, 1838 (*Pentatoma*).
,, Stål, Hem. Afr., i, p. 67, 1864 (*Canthecona*).
Hab.—Damaraland—N.-E. Damaraland (Eriksson), Otjiwarongo, Tsumeb (M. Exp.).

Gen. GLYPSUS Dall.

1851. Dallas, List, i, Hem., p. 93.
1864. Stål, Hem. Afr., i, p. 62 and 63.
1870. Stål, Enum, i, p. 47.

Type.—*G. bouvieri* Schout. (*vigil* Dall. nec Germ.).

G. conspicuus Westwd. S.A.M.

1837. Westwood, Hope Cat., i, p. 33 (*Aelia*).
1864. Stål, Hem. Afr., i, p. 64.

pictiventris Stål, Oefv. Vet. Ak. Förh., p. 213, 1853.
Hab.—Damaraland—N.-E. Damaraland (Eriksson), Namutoni-Outjo (Seewald).
Ovamboland—Nomtele (M. Exp.).

Sub-fam. 7. **Tessaratominae** Stål.

TRIBE NATALICOLARIA Horvath.

Gen. NATALICOLA Spin.

1850. Spinola, Gens. d'Ins. Artr., p. 110.
1891. Bergroth, Rev. d'Ent., t. x, p. 214.

Cyclogaster Westwood, Tr. Ent. Soc. Lond., ii, p. 20, 1837.
,, Stål, Hem. Afr., i, pp. 226 and 233, 1864.
,, Stål, Enum., i, p. 77, 1870.
Gonielytrum Stål, Oefv. Vet. Ak. Förh., p. 223, 1853.
Sub-gen. *Liphaemus* Stål, Enum., ii, p. 130, 1872.

Type.—*N. delegorguei* Spin.

N. pallidus Westwd. S.A.M.

1837. Westwood, Tr. Ent. Soc. Lond., ii, p. 20, pl. 2, fig. 6.
1864. Stål, Hem. Afr., i, p. 233.
1887. Distant, Ent. Month. Mag., xiv, p. 133.

Hab.—Damaraland—N.-E. Damaraland (Eriksson).
Ovamboland—Otjimbumbe, Kunene R. (M. Exp.).

Gen. HAPLOSTERNA Stål.

1864. Stål, Hem. Afr., i, p. 232.
1870. Stål, Enum., i, p. 78.

Aplosterna Westwood, Hope Cat., i, p. 26, 1837.
Encosternum Spinola, Gens. d'Ins. Artr., p. 107, 1852.
Lamus Stål, Oefv. Vet. Ak. Förh., p. 222.

Type.—*H. delegorguei* Spin. (=*Dallasi* Stål).

H. delegorguei Spin. S.A.M.

1852. Spinola, Gens. d'Ins. Artr., p. 109.
1864. Stål, Hem. Afr., i, p. 232.

dallasi Stål, Oefv. Vet. Ak. Förh., p. 222, 1853.
Hab.—" Deutsch-Südwestafrika " (after Lübbert).
Damaraland—Windhuk (M. Exp.); N.-E. Damaraland (Eriksson).

Sub-fam. 8. **Dinidorinae** Stål.

Gen. ASPONGOPUS L. de Castelnau.

1832. L. de Castelnau, Essai, p. 58.
1864. Stål, Hem. Afr., i, pp. 81 and 212.
1867. Stål, Oefv. Vet. Ak. Förh., p. 522.
1870. Stål, Enum., i, p. 81.

Spongopodium Spinola, Essai Hem., p. 305, 1837.
Amacosia Spinola, Gens. d'Ins. Artr., p. 118, 1852.
Peltagopus Signoret, Ann. Soc. Ent. Fr., p. 936, 1860.
Sub-gen. *Aspongopus* Stål, Enum., i, p. 81, 1870.
Sub-gen. *Colpoproctus* Stål, *ibid.*

Type.—*A. janus* Fabr.

A. nubilus Westwd. S.A.M.

1837. Westwood in Hope Cat., i, p. 23.
1864. Stål, Hem. Afr., i, p. 218.

erythrocerus Germar, Silberm. Rev., v, p. 158, 1837.
monachus, sutor Stål, Oefv. Vet. Ak. Förh., p. 223, 1853.
delegorguei Spinola, Gens. d'Ins. Artr., p. 118, 1852 (*Amacosia*).
Hab.—Damaraland—N.-E. Damaraland (Eriksson), Gobabis (Beetz), Grootfontein (v. Erffa), Okahandja (Casper, Dinter and Peters), Windhuk (Techow), Swakop (after Stål).

A. viduatus Fabr. S.A.M.

1794. Fabricius, Ent. Syst., iv, p. 117.
1803. Fabricius, Syst. Rhyng., p. 153 (*Cimex* and *Edessa*).
1851. Dallas, List, i, p. 348.
1864. Stål, Hem. Afr., i, p. 216.

melanopterus, Herr Schaeffer, Wanz., vii, p. 78, fig. 746, 1844.

var. *japetus* Dist.

1889. Distant, Oates' Matabeleland, ed. 2, p. 387.

Hab.—Damaraland—Grootfontein (Volkmann), Tsumeb (M. Exp.). Ovamboland—Kunene R. (M. Exp.).

A. sartor Stål.

1853. Stål, Oefv. Vet. Ak. Förh., p. 223.
1864. Stål, Hem. Afr., i, p. 219.

Hab.—" Deutsch-Südwestafrika " (after Lübbert and Bisegang).

Sub-fam. 9. **Phyllocephalinae** Dall.

Gen. Dalsira Am. et Serv.

1843. Amyot et Serville, Hem., p. 175.
1870. Stål, Enum., i, p. 119.

Phyllocephala Dallas, List, i, p. 352, 1851.
,, Walker, Cat. Het., iii, p. 489, 1868.
Metonymia Kirkaldy, Cat. Hem., i, p. 244, 1900.

Type.—*D. affinis* Am. et Serv.

D. affinis Am. et Serv. S.A.M.

1843. Amyot et Serville, Hem., p. 176.

fasciata Stål, Oefv. Vet. Ak. Förh., p. 224, 1853 (*Phyllocephala*).
,, Stål, Hem. Afr., i, p. 236, 1864 (*Phyllocephala*).
Hab.—Damaraland—N.-E. Damaraland (Eriksson).

D. lentiginosa Stål. S.A.M.

1853. Stål, Oefv. Vet. Ak. Förh., p. 224.
1864. Stål, Hem. Afr., i, p. 237 (*Phyllocephala*).

Hab.—Ovamboland (coll. Eriksson).

Gen. Schizops Spin.

1837. Spinola, Essai, p. 297.
1876. Stål, Enum., v, p. 120.

Type.—*S. aegyptiaea* Lefebvre.

S. otjimbora n. sp. S.A.M.

(Pl. II, fig. 3.)

Body elongate, oval; the head and the anterior declined part of the pronotum pale yellowish red; the antennae, the rostrum, the posterior part of the pronotum, the scutellum, the clavus and corium, the dorsal surface of the abdomen, the body beneath and the legs deeper yellowish red; the margins of the lateral lobes and the oblique rugae radiating from the medial lobe, the eyes, the basal parts around the eyes and ocelli, the margins of the pronotum, the transverse rugae and callosities on the anterior part, the curved interangular ruga and a lateral longitudinal obscure callous fascia on each side of the posterior part continuous with a lateral fascia on the scutellum, the basal angles and a longitudinal medial callous fascia on the scutellum, the basal half of the costal margin and some levigate lines near the apex of the corium, the margin of the connexivum, a callous fascia across the pro- and mesostethia, three obscure spots, one on each pectoral segment, a medial sternal line, the bases of the spiracles, some irregular mesh-like fasciae on the abdomen beneath and the margins of the sulcations on the tibiae pale yellowish white; some punctuations on the medial lobe, the extreme apex of the rostrum, a small spot on each anterior callosity and some punctuations near the anterior margins and anterior angles of the pronotum, an abbreviated intra-marginal basal fascia on each side and the punctuations near the base of the scutellum, the punctuations on the clavus and corium, the basal part and spots on the membrane, some coarse punctuations on the pectoral region and the sternum, a small spot above each acetabulum, and the spiracular orifices dark brown or blackish.

The head elongate, with the lateral lobes considerably longer than the medial one, contiguous in front (except near the apices), with the upper and under surfaces punctuated; the first antennal joint short, not reaching the apex, the second, third, and fourth of about equal length, the fifth a little longer and fusiform; rostrum three-jointed, extending to between the anterior coxae, the first joint slightly longer than the second, the third slightly shorter than the second; pronotum about twice as broad as long, declined anteriorly, with the anterior margin deeply sinuate, the lateral margins sub-straight, not crenulated, with the posterior lateral angles rounded, with the surface densely punctuate anteriorly and rugulose posterior to the interangular ruga; scutellum densely punctuated, with three longitudinal callous fasciae; hemelytra narrower than the abdomen; clavus and corium densely punctuated, with the apical angles of the corium acute and the apical margin nearly straight; membrane extending a little beyond the abdominal apex; pro-, meso- and metastethia somewhat coarsely punctuated; tibiae triangular spinulose on their under surfaces, slightly sulcated on their upper surfaces.

Length, ♂ about 18 mm.

Breadth, ♂ about 8 mm.

Hab.—Ovamboland—Otjimbora (Eriksson).

Gen. GONOPSIS Am. et Serv.

1843. Amyot et Serville, Hem., p. 180.
1876. Stål, Enum., v, p. 121.

Bessida Walker, Cat. Het., iii, p. 577, 1868.

Type.—*G. denticulata* Am. et Serv.

G. humeralis Dist.

1910. Distant, Ann. Mag. Nat. Hist., vi, p. 219.

Hab.—" Ovamboland " (according to Distant).

FAM. **COREIDAE** Stål.

Sub-fam. 1. **Coreinae** Stål.

DIV. MICTARIA Stål.

Gen. ANOPLOCNEMIS Stål.

1873. Stål, Enum., iii, p. 47.

Mictis (Div. 1), Dallas, List, ii, p. 386, 1852.
,, Stål, Hem. Afr., ii, p. 27, 1865.

Type.—*A. curvipes* Fabr.

A. curvipes Fabr. S.A.M.

1781. Fabricius, Spec., ii, p. 351.
1787. Fabricius, Mant., ii, p. 288.
1794. Fabricius, Ent. Syst., iv, p. 137.
1803. Fabricius, Syst. Rhyng., p. 206 (*Lygaeus*).
1865. Stål, Hem. Afr., ii, p. 29.

apicalis Westwood, Hope Cat., ii, p. 12, 1842.

fuliginosa Klug, Stett. Ent. Zeit., p. 86, 1859 (*Cerbus*).
heteropus Latreille in Caill. Voy. Meroe., iv, p. 287 ; Atlas, ii, pl. lviii, fig. 30.
heteropus Schaum, Peters' Reis. Moss. Ins., p. 41, 1862.
libyssa Dallas, List, ii, pp. 392 and 393, 1852.
gracilis Dallas, *ibid.*, pp. 392 and 393, 1852.
bohemani Stål, Oefv. Vet. Ak. Förh., p. 28, 1855.

Hab.—Damaraland—" N.-E. Damaraland " (Eriksson), Tsumeb (F. Köchig), Gobabis (Beetz), Grootfontein (Volkmann), Grootfontein-Namutoni, Namutoni-Outjo, Karibib, Omaruru, Windhuk (Seewald), Okahandja (Casper, Peters, Dinter, Schultze), Windhuk (Rolle, Techow), Windhuk-Waterberg (Kolbitz), " Swakop " (after Stål).

Ovamboland—Kunene R. (M. Exp.), " Ovamboland " (Eriksson).

Div. PETASCELARIA Stål.

Gen. Petascelis Sign.

1847. Signoret, Ann. Soc. Ent. Fr., p. 302.
1865. Stål, Hem. Afr., ii, pp. 5 and 9.
1873. Stål, Enum., iii, p. 55.

Type.—*P. remipes* Sign.

P. remipes Sign. S.A.M.

1847. Signoret, Ann. Soc. Ent. Fr., p. 302, pl. iii, fig. 4.
1865. Stål, Hem., ii, p. 6.

Hab.—Damaraland—Grootfontein (Volkmann), Windhuk (Techow and M. Exp.), Otavi (M. Exp.), N.-E. Damaraland (Eriksson).

Ovamboland (coll. Eriksson).

Div. HOMOEOCERARIA Stål.

Gen. Homoeocerus Burm.

1835. Burmeister, Handb., II, i, p. 316.
1873. Stål, Enum., iii, p. 57.

Ceratopachys Westwood, Hope Cat., ii, p. 22, 1842.
Prismatocerus Amyot et Serville, Hem., p. 185, 1843.

Philonus Dallas, List, ii, pp. 438 and 448, 1852.
Ornytus (part) Dallas, *ibid.*, pp. 438, 447, and 448.
Tliponius Stål, Oefv. Vet. Ak. Förh., p. 464, 1859.
Anacanthus Uhler, Pr. Ac. Philad., p. 227, 1860.
Anacanthocoris Uhler, *ibid.*, p. 287, 1861.
Diocles, *Tagus* Stål, Hem. Afr., ii, pp. 5, 67, and 68, 1865.

Type.—*H. puncticornis* Burm.

H. auriculatus Stål. S.A.M.

1865. Stål, Hem. Afr., ii, p. 64.

Hab.—Damaraland—Tsumeb (M. Exp.).
Ovamboland (Eriksson) and Omaramba (Eriksson).

H. magnicornis Burm. S.A.M.

1835. Burmeister, Handb., II, i, p. 316.
1852. Dallas, List, ii, p. 503 (*Ceratopachys*).
1873. Stål, Enum., iii, p. 57.

auritulus Amyot et Serville, Hem., p. 185, pl. iv, fig. 3, 1843 (*Prismatocerus*).
Hab.—Ovamboland (coll. Eriksson).

H. nigricornis Germ. S.A.M.

1837. Germar, Silberm. Rev., v, p. 148.
1865. Stål, Hem. Afr., ii, p. 69.

capensis Westwood, Hope Cat., ii, p. 22, 1842 (*Ceratopachys*).
rugifer Stål, Oefv. Vet. Ak. Förh., p. 465, 1859 (*Tliponius*).
Hab.—Damaraland—Namutoni-Outjo (Seewald), Okahandja (Schultze), Otjituo (M. Exp.).
Ovamboland—Omaramba (Eriksson).

H. tigrinus n. sp. S.A.M.

(Pl. II, fig. 5.)

The body pale greenish yellow ; the posterior half of the pronotum, the clavus and the corium, the posterior margins of the pro-, meso- and metastethia and the acetabula punctuated ; the irregular broad annulations on the antennae, the posterior half and the irregular spots on the pronotum, the spots on the clavus and the corium, the infusions on the connexivum, the spots on the under surface of the body, the irregular broad annulations on the femora and tibiae, and the tarsi dull yellowish green ; an obscure lateral fascia on each side of the abdomen, some spots on the margin of the connexivum, part of the genital segment (♂) and some of the spots on the superior surfaces near the apices of the tibiae darker yellowish green to blackish ; the eyes, the ocelli, the posterior apical margin and angles of the coria, the membrane and part of the abdomen beneath reddish or bronzy ; the dorsal surface of the abdomen ochraceous.

The head about as broad as the anterior part of the pronotum ; antennae incrassate, with the first joint round, longer than the head, the second and third joints flattened and triangular, the second longer than the first, the third slightly longer than the first, fourth mutilated ; rostrum extending slightly beyond the middle of the mesosternum, the first joint longer than the second, the second compressed, the third and first subequal and the fourth the longest ; pronotum narrow anteriorly, with the lateral margins nearly straight, the posterior lateral angles subprominent, slightly elevated ; hemelytra narrower than the abdomen ; connexivum reflected upwards, slightly ampliated at about the third and fourth segments ; tibiae triangular, slightly sulcated above and densely spinulose.

Length, ♂ $14\frac{2}{3}$ mm.

Breadth, ♂ acr. pron. 5 mm.

Breadth, ♂ acr. abd. $5\frac{3}{4}$ mm.

Hab.—Ovamboland—Omaramba (Eriksson).

H. trabeatus n. sp. S.A.M.

(Pl. II, fig. 6.)

The head above, the extreme anterior, the lateral margins and the posterior half of the pronotum, the scutellum, the clavus and corium punctuated ; the antennae, the greater part of the head, the antemedial part of the pronotum, the clavus and the corium reddish ; the apex of the second antennal joint, the lateral parts of the head around the eyes, the apex of the rostrum, the laterally slightly raised margins, some anterior punctuations, the posterior half and the punctuations on the pronotum, the basal parts and coarse punctuations on the clavus and corium, the veins of the alae, the dorsal surfaces of the two apical abdominal segments, a spot above each of the two posterior acetabula, an obscure abdominal fascia on each side, a narrow fascia on the superior surfaces of the femora, and the superior surfaces of the tibiae purplish to black ; the anterior medial part of the pronotum, the broad basal costal and the narrow costal margin of the corium, the apex of the scutellum, the connexivum, two oval spots, one between the third and fourth and the other between the fourth and fifth segments, and an obscure medial longitudinal fascia on the dorsal surface of the abdomen, the under surface of the body and the legs ochraceous ; two oval callous spots near the apical margin of the corium whitish ; the membrane bronzy, and the alae slightly infuscated, with a pale purplish sheen ; the dorsal surface of the abdomen cinnabar red. The antennae round, incrassate, with the first joint shorter than the second and slightly shorter than the third, the fourth mutilated in specimen ; rostrum extending to the middle of the mesosternum, the first and fourth joints subequal, longer than the second and third subequal joints ; the posterior lateral pronotal angles obtuse, subprominent, and slightly elevated ; tibiae subtriangular and slightly sulcated above.

Length, ♀ 16$\frac{2}{3}$ mm.
Breadth, ♀ acr. pron. 5 mm.
Breadth, ♀ acr. abd. 5$\frac{1}{2}$ mm.
Hab.—Ovamboland—Omaramba (Eriksson).

H. ventriosus n. sp. S.A.M.

Body dull reddish ochraceous above and ochraceous below ; the head, the pronotum, the clavus and corium, the connexivum, the pectoral regions, and the lateral abdominal regions below punctuated ; the antennae, the narrow lateral margins of the pronotum and the tarsi reddish ; the rostrum, the posterior lateral angles and the posterior part of the pronotum, the posterior margin and angle of the prostethium, part of the meso- and metastethia and the broad lateral abdominal margins below greenish ochraceous ; the apices of the second antennal joints, the apex of the rostrum, the punctuations near the anterior margin of the pronotum, the veins of the alae, the infusions and punctuations on the connexivum, a spot dorsally on each side of the sixth segment, a series of marginal spots about three in each segment on the ventral surface of the abdomen and an obscure fascia on each side of the abdomen beneath purplish brown ; the basal costal margin of the corium and the small spots on the margin of the connexivum yellowish white ; the membrane vitreous with a pale purplish tinge, and the alae pale purplish ; the abdomen above, orange to cinnabar red, with the segmental sutures and the oval spots between the third and fourth and fourth and fifth segments yellow.

The antennal joints flattened and triangular beyond the first, with the fourth fusiform and round, the second the longest, the third slightly longer than the first, and the fourth shorter than the first; rostrum just reaching the intermediate coxae, with the first and third joints subequal, slightly longer than the second, and the fourth slightly longer than the others; the posterior pronotal angles obtuse, subprominently rounded; the apex of the scutellum acutely pointed; abdomen broad, moderately dilated; tibiae subtriangular and slightly sulcated above.

Length of ♀ 16½ mm.
Breadth of ♀ acr. pron. 6 mm.
Breadth of ♀ acr. abd. 7 mm.

This species resembles the preceding one superficially, but is broader, has no callous spots on the corium, has a punctuated connexivum and ventral surfaces, has less prominent posterior lateral angles, etc.

Hab.—Ovamboland—Omaramba (Eriksson).

Div. PHYSOMERARIA Stål.

Gen. PETALOCNEMIS Stål.

1853. Stål, Oefv. Vet. Ak. Förh., p. 259.
1865. Stål, Hem. Afr., ii, pp. 3 and 58.
1873. Stål, Enum., iii, p. 72.

Type.—*P. pachycera* Stål.

P. apicalis Dall. S.A.M.

1852. Dallas, List, ii, Het., p. 517 (*Acanthocoris*).

Hab.—" Deutsch-Südwestafrika " (after Lübbert).
Damaraland—Windhuk (S.A.M.).

P. flavicornis Bredd. S.A.M.

1913. Breddin (Schumacher, Denkschr. Ges. Jena, xvii, p. 61).

Hab.—Damaraland—Okahandja (Schultze), Tsumeb (M. Exp.).

P. spinulosa Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 316 (*Acanthocoris*).
1865. Stål, Hem. Afr., ii, p. 58.

Hab.—Damaraland—Okahandja (Casper), Swakop (after Stål).

Gen. CHOEROMMATUS Am. et Serv.

1843. Amyot et Serville, Hem., p. 204.
1865. Stål, Hem. Afr., ii, pp. 4 and 60.
1873. Stål, Enum., iii, p. 72.

Neurodederrhis Stål, Oefv. Vet. Ak. Förh., p. 260, 1853.

Type.—*C. farinosus* Am. et Serv.

C. techowi Bredd.

1913. Breddin (Schumacher, Denkschr. Ges. Jena, xvii, p. 61).
Hab.—Damaraland—Okahandja (Techow).

DIV. PENDULINARIA Stål.

Gen. PENDULINUS Thb.

1822. Thunberg, Hem. Rostr., cap. iv, p. 5.
1873. Stål, Enum., iii, p. 73.

Sub-gen. *Dasynus* Burmeister, Nov. Act. Ac. Leop., xvi, 1834; Suppl., p. 297.
,, ,, Stål, Enum., iii, p. 73, 1873.
,, *Galaesus* Dallas, List, ii, pp. 438 and 440, 1852.
,, ,, Stål, Hem. Afr., ii, pp. 6 and 38, 1865.
,, *Theraptus* Stål, Oefv. Vet. Ak. Förh., p. 462, 1859.
,, ,, Stål, Hem. Afr., ii, pp. 6 and 38, 1865.
,, *Odontoparia* Mayr, Verh. Zool. Bot. Ges. Wien., xv, p. 433, 1865.
,, ,, Mayr, Reis. Nov. Hem., p. 79, 1866.
,, ,, Stål, Enum., iii, p. 74, 1873.

Type.—*P. hasticornis* Thb.

P. fimbriatus Dist. S.A.M.

1902. Distant, Ann. S. Afr. Mus., ii, p. 247.

Hab.—Damaraland—Grootfontein (M. Exp.).

DIV. GONOCERARIA Stål.

Gen. PLINACHTUS Stål.

1859. Stål, Oefv. Vet. Ak. Förh., p. 470.
1865. Stål, Hem. Afr., ii, pp. 6 and 81.

1873. Stål, Enum., iii, p. 75.
1873. Sub-gen. *Nesiotes* Stål, *ibid.*

Type.—*P. spinosus* Stål.

P. dubius Herr. Schf. S.A.M.

1842. Herr. Schaeffer, Wanz. Ins., vi, p. 9, fig. 565 (*Gonocerus*).
1865. Stål, Hem. Afr., ii, p. 82.
1873. Stål, Enum., iii, p. 75.

Hab.—Damaraland—Otjiwaronga (M. Exp.).

Gen. CLETUS Stål.

1859. Stål, Freg. Eug. Resa. Ins., p. 236.
1865. Stål, Hem. Afr., ii, pp. 6 and 75.
1866. Mayr, Reis. Nov. Hem., p. 118.
1873. Stål, Enum., iii, p. 75.

Type.—*C. trigonus* Thb.

C. binotulatus Stål. S.A.M.

1858. Stål, Oefv. Vet. Ak. Förh., p. 316 (*Gonocerus*).
1865. Stål, Hem. Afr., ii, p. 76.

Hab.—Damaraland—Otjituo (M. Exp.).
Ovamboland—Andoni, Otjimbumbe, Kunene R. (M. Exp.).

C. bis-bipunctatus Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 316 (*Gonocerus*).
1865. Stål, Hem. Afr., ii, p. 77.

Hab.—Damaraland—" Eikhams " (after Stål), Windhuk (after Stål).

C. caffer Stål. S.A.M.

1858. Stål, Oefv. Vet. Ak. Förh., p. 316 (*Gonocerus*).
1865. Stål, Hem. Afr., ii, p. 78.
1873. Stål, Enum., iii, p. 78.

Hab.—Damaraland—Gaub (M. Exp.).

C. decoratus Dist. S.A.M.

1902. Distant, Ann. S. Afr. Mus., ii, p. 249.

Hab.—Damaraland—Grootfontein (M. Exp.), Tsumeb (F. Köchig).
Ovamboland—Otjimbumbe (M. Exp.).

C. notatus Thb. S.A.M.

1783. Thunberg, Nov. Ins. Spec., ii, p. 37.
1822. Thunberg, Hem. Rostr., cap. iii, p. 1 (*Alydus*).
1873. Stål, Enum., iii, p. 77.

Hab.—Ovamboland—Mafa (M. Exp.).

C. nyasana Bergr. S.A.M.

1914. Bergroth, Rev. Zool. Afr., iii, p. 455 (*Cletomorpha*).

Hab.—Ovamboland—Otjimbumbe, Kunene R. (M. Exp.).

C. ochraceus Herr. Schf. S.A.M.

1842. Herr. Schaeffer, Wanz. Ins., vi, p. 7, fig. 563.
1865. Stål, Hem. Afr., ii, p. 77.
1873. Stål, Enum., iii, p. 78.

immaculatus Westwood, Hope Cat., ii, p. 23, 1842 (*Coreus*).
Hab.—Damaraland—Gaub (M. Exp.).

C. pusillus Dall. S.A.M.

1852. Dallas, List, ii, p. 497.
1865. Stål, Hem. Afr., ii, p. 75.

Hab.—Damaraland—Nuragas (M. Exp.), Swakop R. near Otjimbingwe, and Rooibank (Schultze).
Ovamboland—Kambele, Kunene R., Namakunde, Ongka (M. Exp.).

C. pugnax Bredd.

1913. Breddin (Schumacher, Denkschr. Ges. Jena, xvii, p. 63).

Hab.—" Deutsch-Südwestafrika " (after Casper).

C. respersus n. sp. S.A.M.

(Pl. II, fig. 4.)

Body reddish brown, densely and darkly punctuated above, ochraceous below and punctuated on the pectoral region; the antennae, part of the corium (especially near the apical margin and inner apical angle), the apices of the tibiae and the tarsi deeper reddish brown; the fourth antennal joint, the punctuations on the upper surface of the head more or less arranged in two bands, a small line laterally behind each eye, the medial line and the apex of the rostrum, the lateral and anterior punctuations especially anteriorly on the pronotum, the posterior lateral angles, the intramarginal basal costal fascia on the corium, the basal outer margin of the membrane, the small intramarginal punctuations on the connexivum, a spot above each acetabulum, the small spots on the abdomen beneath (arranged in six longitudinal rows), a small spot on each coxa and four or five obscure spots in a row on the under surfaces of the intermediate and posterior femora dark brown to black; the lateral margins of the head, the lateral margins of the pronotum, the apex of the scutellum and the basal costal half of the corium pale yellowish white; an obscure medial longitudinal line on the pronotum, the impunctate lines and two callous spots, one medially and the other near the inner apical angle on the corium whitish; the membrane bronzy and the abdomen above orange red.

The head slightly broader across the eyes than long; the first antennal joint incrassate, about as long as the third and shorter than the second, the fourth incrassate, fusiform, and about half as long as the second; rostrum extending between the intermediate coxae, the first and second, and the third and fourth joints together about equal in length, the fourth a little longer than the third; the lateral margins of the pronotum feebly sinuate, and the posterior lateral angles obtusely prominent and slightly elevated; hemelytra narrower than the body, extending slightly beyond the abdomen in the ♂; mesosternum feebly and the metasternum deeply sulcated; the tibiae feebly sulcated above.

Length of ♂ and ♀ 11 mm.

Breadth of ♂ and ♀ 4 mm.

Hab.—Ovamboland—Omaramba (Eriksson); also
Transvaal—Junction of Crocodile and Marico Rivers (Tucker, M. Exp.).

C. spicatus n. sp. S.A.M.

(Pl. III, fig. 2.)

Body reddish brown, densely and darkly punctuated above, ochraceous below and distinctly punctuated on the pectoral regions; the antennae, the ocelli, the medial line on the rostrum, the medial and apical parts of the corium, the abdomen above and the tarsi deep reddish or brownish ochraceous; a line laterally behind each eye, the apex of the rostrum, the posterior lateral angles and their posterior margins above and below, the intramarginal basal costal fascia and the costal margin beyond the middle of the corium, the external margin of the membrane, some intramarginal punctuations on the connexivum, a small spot above each acetabulum, the small spots on the abdomen beneath arranged in six longitudinal rows, a spot on each coxa and the numerous minute spots on the femora and tibiae black ; the lateral margins of the head and the callous areas behind the eyes, the narrow lateral margins of the pronotum and the basal half of the costal region pale ochraceous ; the callosities at the basal angles and the apex of the scutellum as well as two spots on the corium, one obscure and medial and the other near the inner apical angle, and apical margin yellowish white ; the membrane bronzy.

The head slightly broader across the eyes than long ; the first antennal joint incrassate, about as long as the third and shorter than the second, the fourth missing in the specimen ; pronotum slightly declined in front, the lateral margins more or less straight, the posterior lateral angles acutely produced upwards and slightly forwards with their posterior margins dentate ; hemelytra narrower than the body ; rostrum extending between the intermediate coxae, the first and the second, the third and the fourth joints together of about equal length, the third shorter than the fourth ; tibiae feebly sulcated above.

Length of ♀ 12½ mm.

Breadth of ♀ acr. pron. 5⅓ mm.

Breadth of ♀ acr. abd. 4⅔ mm.

Hab.—Damaraland—Nagusib (M. Exp.).

Div. PHYLLOMORPHARIA Stål.

Gen. Pephricus Am. et Serv.

1843. Amyot et Serville, Hem., p. 235.
1873. Stål, Enum., iii, p. 81.

Type.—*P. paradoxus* Sparr.

P. paradoxus Sparr. S.A.M.

1777. Sparrman, Vet. Ak. H., xxxviii, p. 386, pl. 6, figs. A, B, C.
1781. Fabricius, Spec., ii, p. 510.
1787. Fabricius, Mant., ii, p. 279.
1794. Fabricius, Ent. Syst., iv, p. 73.
1835. Burmeister, Handb., II, i, p. 310 (*Phyllomorphus*).
1843. Amyot et Serville, Hem., p. 235.
1845. Westwood, Arc., i, p. 7, pl. 2, fig. 1.

1865. Stål, Hem. Afr., ii, p. 105 (*Phyllomorpha*).

Hab.—Damaraland—Tsintsabis (M. Exp.).
"Deutsch-Südwestafrika" (after Lübbert).

Gen. TONGORMA Kirk.

1900. Kirkaldy, Entomologist, xxxiii, p. 242.

Craspedum Amyot et Serville, Hem., p. 234, 1843.
,, Stål, Enum., iii, p. 81, 1873.

Type.—*T. phyllomorpha* Latr.

T. phyllomorpha Latr.

1829. Latreille, Cuvier, Regne. anim., iii, p. 438, pl. xix, fig. 3 (*Syromastes*).

1843. Amyot et Serville, Hem., p. 234.

latreillei Guerin, Dict. pitt., pl. 673, fig. 6, 1839; Rev. Zool., p. 233.
,, Westwood, Arc., i, p. 8, pl. ii, fig. 3, 1845.
,, Stål, Hem. Afr., ii, p. 104, 1865 (*Phyllomorpha*).

Hab.—Damaraland—Windhuk ("Eikhams" after Stål).

Sub-fam. 2. **Pseudophloeinae** Stål.

Gen. ACANTHOMIA Stål.

1873. Stål, Enum., iii, p. 82.

Type.—*A. horrida* Germ.

A. tomentosicollis Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 31.
1865. Stål, Hem. Afr., ii, p. 107 (*Clavigralla*).
1873. Stål, Enum., iii, p. 82.

Hab.—Damaraland—"N.-E. Damaraland" (coll. Eriksson).

Gen. BROTHEOLUS Bergr.

1908. Bergroth, Rev. Russ. Ent., vii, p. 107.

Brotheus Distant, Ann. S. Afr. Mus., vol. ii, p. 248, 1902.

Type.—*B. viridis* Dist.

* *B. viridis* Dist. S.A.M.

1902. Distant, Ann. S. Afr. Mus., vol. ii, p. 248.

Hab.—Damaraland—Nuragas, Otjituo (M. Exp.).
Ovamboland—Mafa, Namakunde (M. Exp.).

Div. STENOCEPHALARIA Stål.

Gen. Stenocephalus Latr.

1825. Latreille, Fam. Nat., p. 421.
1873. Stål, Enum., iii, p. 85.

Dicranomerus Hahn, Wanz. Ins., i, p. 22, fig. 13, 1831.
Sub-gen. *Dichromerus* Stål, Enum., iii, p. 85, 1873.
Revisio ; Horvath, Bull. Soc. Ent. Italiana, xix, 1887.

Type.—*S. agilis* Scop.

S. caffer Dall. S.A.M.

1852. Dallas, List, ii, Het., p. 482.

Hab.—Damaraland—Areb, Tsumeb, Namutoni, Waterberg (M. Exp.).
Namaqualand—Kalkfontein (J. Brown).

Sub-fam. 3. **Alydinae** Stål.

Div. ALYDARIA Stål.

Gen. Euthetus Dall.

1852. Dallas, List, ii, pp. 467 and 469.
1865. Stål, Hem. Afr., ii, pp. 7 and 90.
1873. Stål, Enum., iii, p. 91.

Type.—*E. pulchellus* Dall.

E. leucopoecilus Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 30.
1865. Stål, Hem. Afr., ii, p. 91.

Hab.—Namaqualand—Kalkfontein (J. Brown).
Damaraland—Tsumeb (F. Köchig), Okahandja (Dinter).
Ovamboland—Namakunde, Otjimbumbe, Kunene R. (M. Exp.).

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* From the description of *Cletus viridulus* Bredd. in Schumacher, Denkschr. Ges. Jena, xvii, p. 63, 1913, it is evident that *C. viridulus* is a synonym of *B. viridis* Dist.

E. leucostictus Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 30.
1865. Stål, Hem. Afr., ii, p. 91.

Hab.—Ovamboland—Omaramba (Eriksson).

Gen. MIRPERUS Stål.

1859. Stål, Oefv. Vet. Ak. Förh., p. 460.
1873. Stål, Enum., iii, p. 92.

Tupalus Stål, Hem. Afr., ii, pp. 7 and 95, 1865.
Sub-gen. *Melanacanthus* Stål, Enum., iii, p. 92, 1873.

Type.—*M. jaculus* Thb.

M. jaculus Thb. S.A.M.

1783. Thunberg, Nov. Ins. sp., ii, p. 34, pl. ii, fig. 50.
1865. Stål, Hem. Afr., ii, p. 96 (*Tupalus*).
1873. Stål, Enum., iii, p. 92.

crassifemur Stål, Oefv. Vet. Ak. Förh., p. 30, 1855 (*Alydus*).
madagascariensis Signoret, A. S. Ent. Fr., p. 938, 1860 (*Alydus*).
Hab.—Ovamboland—Ondongua (M. Exp.).

Gen. RIPTORTUS Stål.

1859. Stål, Oefv. Vet. Ak. Förh., p. 460.
1865. Stål, Hem. Afr., ii, pp. 7 and 93.

Sub-gen. *Melanolamprus* Stål, Enum., iii, p. 93, 1873.

Type.—*R. dentipes* Fabr.

R. dentipes Fabr. S.A.M.

1787. Fabricius, Mant., ii, p. 290.
1788. Gmelin, Syst. Nat., 1, iv, p. 2144 (*Cimex*).
1802. Wolff, Ic., iii, p. 104, pl. x, fig. 98 (*Lygaeus*).
1803. Fabricius, Syst. Rhyng., p. 249.
1868. Stål, Hem. Fabr., i, p. 65.
1873. Stål, Enum., iii, p. 94.

fabricii Signoret, Ann. Soc. Ent. Fr., p. 940, 1860 (*Alydus*).
,, Stål, 1865, Hem. Afr., ii, p. 93.
Hab.—Ovamboland—Otjimbumbe, Kunene R. (M. Exp.).

Gen. TENOSIUS Stål.

1859. Stål, Oefv. Vet. Ak. Förh., p. 460.
1873. Stål, Enum., iii, p. 95.

Type.—*T. proletarius* Schaum.

T. proletarius Schaum. S.A.M.

1853. Schaum, Ber. Ak. Berl., p. 358.
1862. Schaum, Peters' Reis. Moss. Ins., p. 42, pl. ii, fig. 6 (*Alydus*).

Hab.—Ovamboland—Otjimbumbe, Kunene R. (M. Exp.).

Gen. NEMAUSUS Stål.

1865. Stål, Hem. Afr., ii, pp. 8 and 101.
1873. Stål, Enum., iii, pp. 91 and 95.

Type.—*N. sordidatus* Stål.

* *N. inornatus* Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 315 (*Hypselopus*).
1865. Stål, Hem. Afr., ii, p. 102.

Hab.—Damaraland—" Fluv. Swakop " (after Stål).

N. sordidatus Stål. S.A.M.

1858. Stål, Oefv. Vet. Ak. Förh., p. 315 (*Hypselopus*).
1865. Stål, Hem. Afr., ii, p. 102.

Hab.—Namaqualand—Chamis by Koankip (Schultze).
Damaraland—Nuragas, Otjituo, Otjiwarongo, Windhuk, Tsumeb, Usakos (M. Exp.), " Fluv. Swakop " (after Stål).

Gen. NARISCUS Stål.

1865. Stål, Hem. Afr., ii, pp. 8 and 100.
1873. Stål, Enum., iii, pp. 91 and 95.

Type.—*N. cinctiventris* Germ.

N. cinctiventris Germ. S.A.M.

1837. Germar, Silberm. Rev., v, p. 152 (*Hypselopus*).
1865. Stål, Hem. Afr., ii, p. 101.

validipes Stål, Oefv. Vet. Ak. Förh., p. 315, 1858 (*Hypselopus*).

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* Breddin considers *N. inornatus* Stål and *N. sordidatus* Stål to be identical.

spinosus Signoret, Thomson, Arch., ii, p. 300, 1858 (*Hypselopus*).
Hab.—Namaqualand—Kalkfontein (J. Brown).
Damaraland—Gaub, Otjituo, Otjiwarongo, Tsintsabis (M. Exp.), Tsumeb (F. Köchig), Waterberg (M. Exp.), Gobabis (Beetz), Omaruru-Okanjande (Seewald), Okahandja (Dinter), Salem (Schultze), Swakop region (after Stål).
Ovamboland—Mafa, Ondongua (M. Exp.).

Gen. HYPSELOPUS Burm.

1835. Burmeister (part), Handb., II, i, p. 328.
1865. Stål, Hem. Afr., ii, pp. 7 and 98.
1873. Stål, Enum., iii, pp. 91 and 96.

Meloza Amyot et Serville, Hem., p. 221, 1843.

Type.—*H. gigas* Burm.

H. gigas Burm.

1835. Burmeister, Handb., II, i, p. 329.
1865. Stål, Hem. Afr., ii, p. 99.
1873. Stål, Enum., iii, p. 96.

Hab.—Damaraland—Otjosondu (Casper).
"Deutsch-Südwestafrika" (after Seiner).

Sub-fam. 4. **Corizinae** Stål.

DIV. CORIZARIA Stål.

Gen. CORIZUS Fall.

1814. Fallen, Spec. Nov. Hem. disp. meth. exhib., p. 8.
1870. Stål, Enum., i, p. 222.

Niesthra Spinola, Ess. Hem., p. 245, 1840.
Rhopalus Fieber, Eur. Hem., p. 232, 1861.
Brachycarenus Fieber, Eur. Hem., p. 236, 1861.
Colobatus Mulsant et Rey, Pun. France, pp. 105 and 137, 1870.
Sub-gen. *Liorhyssus* Stål, Enum., i, p. 222, 1870.
Sub-gen. *Arhyssus* Stål, Enum., i, p. 223, 1870.
Stictopleurus Stål, Oefv. Vet. Ak. Förh., No. 6, p. 55, 1872.

Aeschyntelus Stål, Oefv. Vet. Ak. Förh., No. 6, p. 55, 1872.
Peliochrous Stål, Enum., iii, pp. 97 and 98, 1873.
Monograph by Signoret, Ann. Soc. Ent. Fr., p. 75, 1859.

Type.—*C. crassicornis* Linn.

C. hyalinus Fabr. S.A.M.

1794. Fabricius, Ent. Syst., iv, p. 168 (*Lygaeus*).
1803. Fabricius, Syst. Rhyng., p. 201 (*Coreus*).
1868. Stål, Hem. Fabr., i, p. 68.
1881. Distant, Biol. Centr. Amer., pl. xvi, fig. 7.
1888. Reuter, Rev. Syn., p. 171.

gracilis Herr. Schaeffer, Faun. Germ., p. 127, 1834.
,, Herr. Schaeffer, Wanz. Ins., vi, p. 1, pl. clxxxi, fig. C, 1842.
,, Signoret, Ann. Soc. Ent. Fr., p. 88, 1859.
truncatus Rambur, Faun. And., ii, p. 144, 1841.
,, Stål, Hem. Afr., ii, p. 117, 1865.
variegatus Signoret, Ann. Soc. Ent. Fr., p. 89, 1859.
viridicatus Uhler, Hayden's Surv. Mont., iv, Zool. et Bot., p. 404, 1872.
Hab.—Damaraland—Grootfontein, Otjituo, Windhuk (M. Exp.).
Ovamboland—Andoni, Ukualuthi (M. Exp.).

C. natalensis Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 31.
1859. Signoret, Ann. Soc. Ent. Fr., p. 87.
1865. Stål, Hem. Afr., ii, p. 118.

puncticornis Stål, Oefv. Vet. Ak. Förh., p. 32, 1855.
Hab.—Ovamboland—Mafa (M. Exp.).

C. scutellaris Dall. S.A.M.

1852. Dallas, List, ii, p. 526 (*Rhopalus*).
1865. Stål, Hem. Afr., ii, p. 115 (*Corizus*).
1873. Stål, Enum., iii, p. 98 (*Stictopleurus*).

pilosicollis Signoret, Ann. Soc. Ent. Fr., p. 76, 1859.
,, Stål, Oefv. Vet. Ak. Förh., p. 31, 1855.
stali Signoret, Ann. Soc. Ent. Fr., p. 78, 1859.

coquereli Signoret, Ann. Soc. Ent. Fr., p. 78, 1859.
Hab.—Damaraland—Otjikoto-Dinab (M. Exp.).

Gen. Agraphopus Stål.

1872. Stål, Oefv. Vet. Ak. Förh., No. 6, pp. 55 and 56.
Leptoceraea Jakowleff, Troudy. Ent. Ross., vii, p. 39, 1874.

Type.—*A. lethierryi* Stål.

A. australis n. sp. S.A.M.

(Pl. III, fig. 3.)

Body pale stramineous, finely pilose ; the head, the pronotum, the scutellum, the lateral narrow costal margins of the coria and the pectoral regions coarsely punctuated ; the first and fourth antennal joints, the sutures between the medial and lateral lobes, a short fascia on each side extending from the region of the ocellus to about the middle, the basal part of the head, the lateral parts of the head, the apex of the rostrum, four smooth callous spots on the anterior part, a large lateral one and a smaller medial one on each side and four longitudinal fasciae, two medial, one on each side of the medial line and one intramarginally on each side on the pronotum, the lateral parts and a subapical spot on the scutellum, the clavus in part especially its apical margins, a smooth oblong spot on the prostethium, a longitudinal fascia on each side across the meso-, metastethia and abdomen, the lateral parts of the mesosternum, the coxae, the apical parts of the posterior femora, the extreme apices of the posterior tibiae and the apices of the tarsi brownish to black ; the basal parts of the ocelli, the carinate lateral margins and the medial longitudinal line on the pronotum, the broad apex of the scutellum, the narrow costal margins of the coria and the spiracles albescent ; the antennae, the basal part of the clavus, the veins and the apical margin of the corium, the dorsal surface of the abdomen and the legs pale brownish to deep brown ; the ocelli reddish ; the membrane hyaline and the lateral apical parts of the abdomen above and the connexivum above ochraceous.

The head large, slightly longer than the pronotum, the upper surface granular (owing to the presence of small tubercles carrying bristle-like hairs), with the lateral lobes very slightly shorter than the medial lobe ; the antenniferous tubercles prominent and rounded ; the first antennal joint short and incrassate, reaching the apex of the head, the second the longest, the fourth incrassate and fusiform, a little longer than the first, but shorter than the third, with the base slender ; the rostrum extending slightly beyond the intermediate coxae, the second joint the longest, the third the shortest, and the fourth shorter than the first ; pronotum slightly narrower anteriorly than posteriorly, slightly depressed anteriorly and with the lateral margins slightly carinate, the posterior lateral angles obtuse ; scutellum obscurely carinate medially, with its apex prominent and rounded ; the apical half of the clavus and the greater part of the corium transparent hyaline (the dark body beneath is visible and hence the deep brown coloration) ; the veins finely pilose ; hemelytra broader than the abdomen and the apex of the membrane extending a little beyond the abdomen in the ♂.

Length of ♂ 5 mm., of ♀ 5¼–5¾ mm.

Breadth of ♂ 1¼ mm., of ♀ 1¼–1¾ mm.

Some specimens are paler than others, and the dark coloration on the head, pronotum, and the under surface of the body is very obscure.

Hab.—Damaraland—Otjituo (M. Exp.) ; also
Transvaal—Maboka (Lydenberg) (coll. Kroeger).
S. Rhodesia—Salisbury (Tucker, M. Exp.).

Div. SERINETHARIA Stål.

Gen. SERINETHA Spin.

1837. Spinola, Essai, p. 247.
1873. Stål, Enum., iii, p. 99.

Leptocoris Hahn, Wanz. Ins., i, p. 200, 1831.
Pyrrhotes Westwood, Hope Cat., ii, p. 6, 1842.
Lygaeomorphus Blanchard, Hist. des Ins., iii, p. 116, 1840.
Tynotoma, Amyot et Serville, Hem., p. 220, 1843.

Type.—*S. abdominalis* Fabr.

S. haematica Germ. S.A.M.

1837. Germar, Silberm. Rev., v, p. 144 (*Leptocoris*).
1865. Stål, Hem. Afr., ii, p. 113.

augur Blanchard, Hist. Ins., iii, p. 116, 1840 (*Lygaeomorphus*).
lateralis Signoret, Ann. Soc. Ent. Fr., p. 939, 1860.
Hab.—Damaraland—Sandfontein (Miss Wilman).

FAM. **BERYTIDAE** Fieb.

Sub-fam. **Metacanthinae.**

Gen. GAMPSOCORIS Füss.

1852. Füss, Mitth. d. Ver. Hermanst., 7.

Metacanthus Costa, Atti. Ac. Nap., p. 258, 1848.
,, Fieber, Eur. Hem., p. 213, 1861.
,, Saunders, Hem. Het. Brit. Isles, p. 65, 1892.
Armanus Mulsant et Rey, Pun. d'France, p. 187, 1870.

Type.—*G. elegans* Curtis.

G. concolor B. White. S.A.M.

1878. Buch. White, P.Z.S. Lond., p. 464.

Hab.—Damaraland—Nuragas, Otjituo, Waterberg (M. Exp.).
Ovamboland—Namakunde, Otjimbumbe, Kunene R. (M. Exp.).

FAM. **LYGAEIDAE** Stål.

Sub-fam. 1. **Lygaeinae** Stål.

DIV. LYGAEARIA Stål.

Genus LYGAEUS Fabr.

1794. Fabricius, Ent. Syst., iv, p. 133 ; *id.*, Syst. Rhyng., p. 203, 1803.

1872. Stål, Oefv. Vet. Ak. Förh., No. 7, p. 41 ; En. Hem., iv, p. 99, 1874.

Lygaeosoma Fieber, Eur. Hem., pp. 45 and 167, 1861.
Lygaeodon Puton, Ann. Soc. Ent. Fr., p. 139, 1869.
Sub-gen. *Melanospilus*, *Stalagmostethus*, *Spilostethus*, *Graptolomus*, *Microspilus*, *Melanostethus*, *Melanerythrus* Stål, Hem. Fabricius, i, pp. 72, 73, 75, and 76, 1868.
Sub-gen. *Cosmopleurus*, *Melanocoryphus* Stål, Oefv. Vet. Ak. Förh., No. 7, p. 41, 1872.
Sub-gen. *Haemobaphus*, *Melanopleurus*, *Craspeduchus*, *Ochrostomus*, *Ochrimnus* Stål, En. Hem., iv, pp. 104, 105, and 113, 1874.
Sub-gen. *Eulygaeus* Reuter, Act. Soc. Fenn., xv, p. 180, 1888.
Sub-gen. *Tropidothorax* Bergroth, A. S. Ent. Belg., xxxviii, p. 547, 1894.

Type.—*L. militaris* Fabr.

L. (*Stalagmostethus*) *concinnus* Dall. S.A.M.

1852. Dallas, List, ii, p. 542.
1865. Stål, Hem. Afr., ii, p. 137.

Hab.—Damaraland—Gaub, Nuragas, Otjituo, Otjiwarongo, Tsumeb, Waterberg, Windhuk (M. Exp.); Swakop, Okahandja (Casper), Gobabis (Beetz), N. Damaraland (Eriksson), Windhuk (S. Gilman).
Ovamboland—Ovamboland, Omaramba (Eriksson), Mafa (M. Exp.).

L. (*Stalagmostethus*) *contaminatus* Dall.

1852. Dallas, List, ii, p. 533.
1865. Stål, Hem. Afr., ii, p. 128.

Hab.—Namaqualand—Bethany (Schenck).

L. (*Stalagmostethus*) *festivus* Thb. S.A.M.

1822. Thunberg, Hem. Rostr., cap. iv, p. 8.
1865. Stål, Hem. Afr., ii, p. 135.

furcula Dallas, List, ii, p. 513, 1852.
,, Herr. Schaeffer, Wanz. Ins., ix, p. 197, 1853.
spinipes Signoret, Ann. Soc. Ent. Fr., p. 946, 1860.
saundersi Mulsant et Rey., Opusc. Ent., xiv, p. 225; Pun. de Fr., p. 20, 1879.
planitiae Distant, Nat. in Trsvl., App., p. 252, pl. 3, fig. 7, 1892.
Hab.—Damaraland—Swakop R. near Otjimbingwe (Schultze), Tsumeb (M. Exp.).
Ovamboland—Omaramba (Eriksson).

L. (*Stalagmostethus*) *furcatus* Fabr. S.A.M.

1787. Fabricius, Mant., ii, p. 301 (*Cimex*).
1794. Fabricius, Ent. Syst., iv, p. 160.
1803. Fabricius, Syst. Rhyng., p. 226.
1852. Dallas, List, ii, p. 535.
1865. Stål, Hem. Afr., ii, p. 130.
1868. Stål, Hem. Fabr., i, p. 72.

fuscatus Gmelin, Syst. Nat., I, iv, p. 2174 (1788).
var. *convergens* Dallas, List, ii, p. 535, 1852.
fairmairei Signoret, Ann. Soc. Ent. Fr., p. 946, 1860.
consentaneus Walker, P.Z.S. Lond., p. 167, 1863.

Hab.—Damaraland—Nuragas, Tsintsabis, Windhuk (M. Exp.).
Ovamboland—Omaramba (Eriksson), Okavango River (Eriksson).

L. (*Stalagmostethus*) *macilentus* Stål. S.A.M.

1874. Stål, Enum., iv, p. 106.

longulus Stål, Hem. Afr., ii, p. 136, 1865.
Hab.—Namaqualand—Berseba, Keetmanshoop (Rehbock).
Damaraland—Okahandja (Peters), Windhuk (Gentz), Omaruru-Okanjande, Otavi (Seewald), Sandfontein (Gilman), Tsumeb (M. Exp.).
Ovamboland—Mafa, Otjimbumbe, Kunene R. (M. Exp.), Ovamboland (Eriksson).

L. (*Stalagmostethus*) *militaris* Fabr. S.A.M.

1775. Fabricius, Ent. Syst., p. 717 (*Cimex*).
1794. Fabricius, Ent. Syst., iv, p. 147.
1861. Fieber, Europ. Hem., p. 166.
1865. Stål, Hem. Afr., ii, p. 133.
1879. Mulsant et Rey, Pun. de Fr., p. 18.
1886. Puton, Cat., p. 28.
1893. Bergroth, Bull. Soc. Ent. Fr., p. 225.
1893. Noualhier, Ann. Soc. Ent. Fr., p. 9.

elegans Wolff, Icon., iii, p. 112, fig. 106, 1802.
,, Burmeister, Handb., II, i, p. 298, 1835.
,, Dallas, List, ii, p. 541, 1852.
,, Stål, Hem. Afr., ii, p. 134, 1865.
,, Stål, Enum., iv, p. 105, 1874.
pandurus Scopoli, Ent. Carn., p. 126, 1763; de Villiers, Linn. Ent., i, p. 526.
,, Reuter, Rev. d'Ent., iv, p. 201, 1885.
Hab.—Namaqualand—Bethany (Schenck), Kabub-Aar (Schultze).
Damaraland—Grootfontein (Volkmann), Gobabis (Beetz), Okahandja (Casper), Omaruru-Okanjande, Otavi (Seewald), Outjo (Langheld), Windhuk (Seewald, Gilman), Gaub, Otjiwarongo, Otjituo, Otjiko-Dinab, Nuragas, Tsumeb, Waterberg, Windhuk (M. Exp.), N.-E. Damaraland (Eriksson).
"Ovamboland" (Eriksson).

L. septus Germ. S.A.M.

1837. Germar in Silberm. Rev., v, p. 142.

Hab.—Damaraland—Otjituo (M. Exp.).

Gen. GRAPTOSTETHUS Stål.

1868. Stål, Hem. Fabr., i, p. 73.
1872. Stål, Oefv. Vet. Ak. Förh., No. 7, p. 42.
1874. Stål, Enum., iv, pp. 99 and 116.

Type.—*G. servus* Fabr.

G. grandis Dist. S.A.M.

1901. Distant, Ann. Mag. Nat. Hist., vii, p. 537.

Hab.—Damaraland—Otjiwarongo (M. Exp.).
Ovamboland (coll. Eriksson).

The three specimens, two males and one female, from Ovamboland differ from Distant's description and from the one labelled specimen we possess in being narrower, 3·5–4 mm. across the pronotum, in being very pilose and pubescent, in having the entire clavus with the exception of the inner basal part, an obscure subapical spot on the corium, four spots on the basal parts of the segments on the connexivum and abdominal margin, and a transverse fascia along the base of each abdominal segment beneath black.

As the other specific characters do not differ from the description, the differences in colour may be considered as variations to which the species is subject.

G. pictus Dist. S.A.M.

1901. Distant, Ann. Mag. Nat. Hist., vii, p. 537.

Hab.—Damaraland—Windhuk (M. Exp.).

G. (*Pyrrhobaphus* Dall.) *servus* Fabr.

1787. Fabricius, Mant., ii, p. 300.
1794. Fabricius, Ent. Syst., iv, p. 156.
1803. Fabricius, Syst. Rhyng., p. 223.
1865. Stål, Hem. Afr., ii, p. 139 (*Lygaeus*).
1868. Stål, Hem. Fabr., i, p. 74.
1874. Stål, Enum., iv, p. 117.
1888. Reuter, Rev. Syn., p. 185.

incomptus, Herr. Schaeffer, Wanz. Ins., viii, p. 104, fig. 875, 1848.

incomptus, Herr. Schaeffer, Wanz. Ins., ix, p. 196, 1853 (*Lygaeus*).
ornatus, Uhler, Pr. Ac. Philad., p. 227, 1860 (*Lygaeus*).
Hab.—Deutsch-Südwestafrika (after Kuhn).
Damaraland—Okahandja (Casper).

Div. ORSILLARIA Stål.

Gen. Nysius Dall.

1852. Dallas, List, ii, pp. 331 and 551.
1874. Stål, Enum., iv, p. 119.
1890. Horvath, Rev. d'Ent., ix, p. 185.

Cymus, sub-gen. *Artheneis* Flor., Rhynch. Livl., i, p. 287, 1860.
,, sub-gen. *Rhypodes* Stål, Hem. Fabr., i, p. 76, 1868.
,, sub-gen. *Nithecus* Horvath, Rev. d'Ent., ix, pp. 187 and 191, 1890.
Sub-gen. *Nysius* Stål, Enum., iv, p. 120, 1874.
,, ,, Horvath, Rev. d'Ent., ix, pp. 187 and 191, 1890.
,, *Ortholomus*, *Macroparius* Stål, Oefv. Vet. Ak. Förh., No. 7, p. 43, 1872.
,, *Anorthus* Horvath, Rev. d'Ent., ix, p. 191, 1890.

Type.—*N. zealandicus* Dall.

N. binotatus Germ. S.A.M.

1837. Germar, Silberm. Rev., v, p. 138 (*Cymus*).

Hab.—Namaqualand—Kalkfontein (J. Brown).
Damaraland—Otjituo, Windhuk (M. Exp.).
Ovamboland—Otjimbumbe, Kunene R., Ongandjera (M. Exp.).

Sub-fam. 2. **Blissinae** Stål.

Gen. Ischnodemus Fieb.

1836. Fieber, Weit. Beitr., p. 337.
1861. Fieber, Eur. Hem., pp. 44 and 163.
1874. Stål, Enum., iv, pp. 129 and 130.

Micropus Spinola, Ess. Hem., p. 218, 1840.
,, Signoret, Ann. Soc. Ent. Fr., p. 24, 1857.
Blissus Stål, Hem. Afr., ii, p. 122, 1865.

Type.—*I. sabuleti* Fall.

I. curticornis Stål. S.A.M.

1874. Stål, Enum., iv, p. 131.

brevicornis Stål, Oefv. Vet. Ak. Förh., p. 35, 1855 (*Micropus*).
,, Stål, Hem. Afr., ii, p. 123, 1865 (*Blissus*).

Hab.—Damaraland—Otjituo (M. Exp.).
Deutsch-Südwestafrika (after Seiner).

I. linearis Stål.

1855. Stål, Oefv. Vet. Ak. Förh., p. 35 (*Micropus*).
1865. Stål, Hem. Afr., p. 124 (*Blissus*).

Hab.—Deutsch-Südwestafrika (after Seiner).

Gen. BLISSUS Klug.

1845. Klug, Symb. Phys., v, pl. xliii, fig. 10.
1835. Burmeister, Handb., II, i, p. 290.
1872. Stål, Oefv. Vet. Ak. Förh., No. 7, p. 45.
1865. Stål (in part), Hem. Afr., ii, p. 122.

Type.—*B. hirtulus* Klug.

B. cornipes n. sp. S.A.M.

(Pl. III, fig. 4.)

Body greyishly, finely pubescent and pilose; the head, the pronotum (except for the posterior margin and the basal part of the scutellum) punctuated, the narrow costal part of the corium feebly so; the head, the apex of the rostrum, the pronotum, the scutellum, the basal part of the clavus, the apical part and the apical margin of the corium, the abdomen above, the body beneath, the small spines at the apices of the tibiae and the claws of the tarsi blackish brown; the apex of the head, the ocelli, the posterior margin and the posterior lateral angles of the pronotum, the apex of the scutellum, the apical margins of the clavus, part of the inner apical margin of the corium, a basal part and an infusion across the veins near the middle of the membrane, the posterior margin of the prostethium and the coxae paler, more reddish brown; the antennae, the rostrum and the legs pale reddish or brownish yellow; the eyes red or testaceous; the corium and membrane dull, subopaque, whitish.

The head about as broad across the eyes as long, its apex slightly produced, upper surface slightly convex; first antennal joint incrassate, short, just reaching the apex, second feebly clavate apically, longer than the first, about as long as the fourth fusiform joint, third shorter than the second, slightly longer than the first; rostrum just reaching the posterior coxae, with the second joint longer than the first, first extending slightly beyond the base of the head, third and fourth subequal, slightly shorter than the first; pronotum about as long as broad, slightly depressed beyond the middle (where the punctuations are denser), with the anterior margin sinuate, the lateral margins slightly convex before the middle, rounded anteriorly, posterior lateral angles obtuse, and posterior margin broadly, slightly concave to the scutellum; scutellum broad, short, slightly depressed basally, its apical part subcarinate; apical margin of corium sinuate near the inner apical angle; membrane comparatively large, not reaching the abdominal apex; femora slightly incrassate, armed with long bristles on their inferior surfaces; anterior femora with a small blunt subapical spine below; tibiae with a crown of small spines at the apices; tarsi with the apical joint about as long as the two basal ones together.

Length, ♂ and ♀ about $3\frac{1}{2}$ mm.
Breadth, ♂ and ♀ about $1\frac{1}{2}$ mm.
Hab.—Damaraland—Otjituo (M. Exp.); also
Transvaal—Johannesburg (A. Ross).

Sub-fam. 3. **Geocorinae** Stål.

Gen. GEOCORIS Fall.

1814. Fallen, Hem. disp., p. 10.
1865. Stål, Hem. Afr., ii, p. 143.
1874. Stål, Enum., iv, pp. 133 and 134.

Salda Latreille, Regne. Anim., v, p. 198, 1829.
,, Spinola, Ess. Hem., p. 227, 1840.
Opthalmicus Schilling (*pro parte*), Beitr. zur. Ent., i, p. 62, 1829.
,, Fieber, Eur. Hem., pp. 46 and 174, 1861.
Sub-gen. *Mallocoris* Stål, Oefv. Vet. Ak. Förh., No. 7, p. 46, 1871.
Sub-gen. *Piocoris* Stål, *ibid.*, No. 7, p. 45, 1872.

Type.—*G. megacephalus* Rossi.

G. megacephalus Rossi. S.A.M.

1832. Rossi, Faun. Etrusc., ii (*Cimex*).
1861. Fieber, Eur. Hem., p. 176 (*Opthalmicus*).

1886. Puton, Cat., p. 23.
1888. Reuter, Rev. Syn., p. 188.
lapponicus Zetterstedt, Ins. Lappon., p. 266.
,, Fieber, Ent. Mon., p. 124, 1861.
,, Fieber, Eur. Hem., p. 175, 1861.
albipennis Fallen, Hem., p. 70.
phaeopterus Germar, Silberm. Rev., v, p. 136, 1837.
,, Fieber, Ent. Mon., p. 121, 1844 (*Opthalmicus*).
Hab.—Damaraland—Otjituo (M. Exp.).
var. *necopitanus* Schumacher, Denkschr. Ges. Jena,xvii, p. 68, 1913.
Hab.—Damaraland—Okahandja (Casper).

G. scutellaris Puton. S.A.M.

1886. Puton, Hem. rec. en. Tunisie, p. 15 (in Expl. Sc. Tunis).
1886. Puton, Cat., p. 23.
Hab.—Ovamboland—Kambele, Kunene R. (M. Exp.).

G. tenuatus n. sp. S.A.M.

(Pl. II, fig. 7.)

The body flat, narrow and elongated, with the sides more or less parallel, greyishly pubescent, poorly above and more uniformly below; the anterior part and the posterior part of the pronotum behind the transverse, smooth, shining and impunctate callous spots (and with the exception of the narrow posterior margin), the scutellum, the clavus and corium along their line of suture, the part near, the inner apical angle and the apical part of the corium punctuated; the head, the antennae, the rostrum, the eyes and ocelli, the abdomen below, the coxae and the femora pale reddish brown; the fourth antennal joints, the apex of the head, the extreme apices of the femora, the tibiae and tarsi paler, more yellowish; the basal part of the head above and an obscure, abbreviated, longitudinal fascia on each side extending from the ocellus forwards, the apex of the rostrum, the anterior two-thirds of the pronotum, the scutellum, the pectoral regions, and the medial part of the abdomen below black; the posterior part of the pronotum, the apex of the scutellum, the clavus and corium, the posterior margin of the prostethium, the orifice of the odoriferous glands, the margin of the connexivum and the acetabula pale yellowish white; the abdomen above deep brown, and the membrane transparent hyaline.

The head broad, together with the eyes broader than the body, the apex rather prominent and projecting slightly ; eyes large, oblique, projecting slightly backwards over the anterior pronotal angles ; ocelli oblique, situated in depressions ; first antennal joint the shortest, extending slightly beyond the apex, second joint longer than the first or third, slightly shorter, than fusiform fourth; rostrum extending to about the posterior coxae, with the first and second joints subequal, third slightly longer, and the fourth slightly shorter than the two former ; pronotum slightly longer than the head, longer than broad, transverse, about as broad anteriorly as posteriorly, medially slightly depressed, with the anterior lateral angles rounded and the posterior lateral angles obtuse, not prominent, the posterior margin more or less straight ; scutellum elongate, medially slightly elevated, subcarinate apically ; hemelytra about as broad as the abdomen ; clavus narrowed apically ; membrane with four veins, not reaching the apex of the abdomen (♂) ; femora compressed, slightly incrassate, attenuated apically ; posterior tarsi longer than anterior ones, with the first joint elongated, about as long as the two apical ones together.

Length of ♂ about 4 mm.

Breadth of ♂ acr. eyes about 1¼ mm.

Breadth of ♂ acr. pron. and abd. about 1 mm.

Hab.—Damaraland—Otjituo (M. Exp.).

Sub-fam. 4. **Pachygronthinae** Stål.

Gen. Teracrius Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 317.
1865. Stål, Hem. Afr., ii, p. 146.
1874. Stål, Enum., iv, p. 138.

Type.—*T. namaquensis* Stål.

* *T. namaquensis* Stål. S.A.M.

1858. Stål, *loc. cit.*, p. 317.
1865. Stål, *loc. cit.*, p. 146.

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* The specimens, both ♂♂ and ♀♀, depart a little from Stål's description with respect to colour, and they vary from pale brownish ochraceous to dark blackish ochraceous, and only two dark spots are visible on the hemelytra, one at the apex of the corium and the other at about the middle of the apical margin. However, there can be no doubt that the specific description agrees with the specimens under observation.

Hab.—Damaraland—Otjituo (M. Exp.), Grootfontein (M. Exp.).
Ovamboland—Namakunde, Otjimbumbe, Kunene R. (M. Exp.).

PARAPHLEGYAS n. gen.

Body elongate; head slightly convex, with the apex prominent, narrow and produced; antenniferous tubercles prominent; eyes large; ocelli far apart; the first antennal joints short, not reaching the apex of the head; rostrum comparatively short, with the first joint not reaching the base of the head; pronotum slightly convex; scutellum carinate or subcarinate, more or less equilateral; corium with the apical margin sinuate near the apex of the clavus; pectoral region convex; anterior legs inserted further forwards from the intermediate ones than the posterior ones are posteriorly; anterior femora moderately incrassate, dentate on their under surfaces; anterior tibiae slightly curved, dentately ampliated; tarsi long, three-jointed. This genus is allied to *Teracrius* and *Phlegyas*.

Type.—*P. elegans* n. sp.

P. elegans n. sp. S.A.M.

(Pl. III, fig. 5.)

The body whitishly pubescent on the head, the anterior half or two-thirds of the pronotum, the scutellum, and densely so on the under surface; punctuated on the head, the pronotum, the scutellum, the clavus and corium (with the exception of the medial parts), on the dorsal surface of the abdomen and laterally below; the base of the first antennal joint, the upper surface of the second, the head, the two apical joints of the rostrum, the pronotum, the scutellum, the dorsal surface of the abdomen, the body beneath, the femora, the apices of the dentate spines on the anterior femora, the subbasal and subapical annulations on the tibiae, the under surfaces of the anterior tibiae, the under-surfaces of the first tarsal joints and the two apical joints of the tarsi black; the apices of the first antennal joints, the under surfaces of the second, the third and fourth joints (sometimes the entire antenna dark), the two basal joints of the rostrum and the lateral parts of the last two joints of the abdomen above (in the ♂) pale brownish yellow to yellowish white; the clavus and corium, the connexivum above and below, the anterior part of the prosternum, the narrow posterior margin of the prostethium and the under surfaces of the posterior lateral angles, the posterior angles of the metastethia, a subapical spot on the upper surfaces of the anterior femora, the apices of the posterior femora, the dentate spines on the anterior femora, the upper surfaces of the anterior tibiae, the posterior tibiae, and the upper surfaces of the first tarsal joints yellowish white ; the membrane transparent hyaline.

The head about as long as broad across the eyes, with the antenniferous tubercles projecting outwards as prominent blunt spines ; the second, third, and fourth antennal joints of about equal length, longer than the first ; rostrum extending to between the anterior coxae ; bucculae short, slightly elevated, projecting slightly forwards ; the four rostral joints subequal (as far as can be seen in the carded specimens) ; pronotum about as broad as long, slightly declined posteriorly to the scutellum, slightly depressed laterally and medially at about the middle, coarsely punctuated posteriorly, impunctate anteriorly on an obscure spot on each side of the lateral margins, feebly convex anteriorly, the posterior lateral angles slightly tumid and not prominent ; scutellum elevated basally and medially, subcarinate apically ; hemelytra about as broad as the abdomen (♂), slightly narrower (♀) ; coria with the apices rounded ; membrane with five veins, not reaching the abdominal apex ; anterior femora moderately incrassate, fusiform, armed beneath with slender hairs and a row of dentate spines composed of three large ones and two to three smaller ones in between ; anterior tibiae shorter than the femora, slightly curved, apically feebly dentately ampliated ; tarsi long, slightly shorter than the anterior and intermediate tibiae, basal joint about as long as the two apical ones together ; posterior femora and tibiae longer than the anterior ones ; apex of abdomen in ♂ more attenuated than in ♀.

Length of ♂ 4½ mm., of ♀ 5 mm.

Breadth of ♂ acr. pron. about 1 mm., of ♀ about 1⅓ mm.

Breadth of ♂ acr. abd. about 1 mm., of ♀ about 1⅓ mm.

Hab.—Ovamboland—Namakunde (M. Exp.).

P. namakundensis n. sp. S.A.M.

(Pl. IV, fig. 2.)

The body dull yellowish or ochraceous, feebly whitishly pubescent on the head, the antero-lateral parts of the pronotum, and below ; punctuated on the head, the pronotum, the scutellum, the clavus and corium, the abdomen above and the body below; the inner surfaces of the first and second antennal joints, the anterior and antero-lateral parts of the head, the basal part and the under surface of the head, the apical joint of the rostrum, a large transverse spot on each side just before the middle of the pronotum, a medial basal spot and the basal angles of the scutellum, a lateral longitudinal fascia (also showing through the medial impunctate cell of the corium) and an interrupted medial fascia near the apex on the dorsal surface of the abdomen, the anterior part of the prosternum, the meso- and metasterna, an oblong spot on the prostethium above the acetabulum, the upper basal angle of the mesostethium, an obscure fascia on each side extending from the metastethium on to the abdomen, the coxae and trochanters (as far as can be seen in a carded specimen), the under surfaces and the apices of the dentate spines on the anterior femora, the lateral inner basal surfaces of the intermediate and posterior femora blackish brown to black; the extreme bases of the third and fourth antennal joints, the upper surface of the head, the eyes and ocelli, the third rostral joint, a broad transverse fascia across the two black spots and the posterior narrow margin on the pronotum, the lateral basal parts of the scutellum, a large spot on the prostethium above the acetabulum, a spot and the posterior margin on the mesostethium, a large spot on the metastethium, and the apices of the tarsi reddish brown to testaceous; the membrane transparent hyaline.

The head about as long as broad across the eyes, the apex prominently produced, the upper surface slightly convex; with the antenniferous tubercles prominent, bluntly produced; the first antennal joint the shortest, the second slightly longer than the third and fourth equal joints; rostrum extending very slightly beyond the anterior coxae, with the first three joints subequal and slightly shorter than the fourth; pronotum about as long as broad, with the antero-lateral margins slightly convex, medially transversely depressed, the posterior lateral angles tumid, subprominent; scutellum basally elevated, apically carinate; hemelytra slightly narrower than the abdomen, not reaching the abdominal apex (♀); coria with the costal margins feebly sinuate basally; anterior femora moderately incrassate and armed beneath with a row of three large dentate spines and two or three smaller ones in between; tarsi long.

Length of ♀ 5⅓ mm.

Breadth of ♀ about 1 mm.

Hab.—Ovamboland—Namakunde (M. Exp.).

P. pallidus n. sp. S.A.M.

(Pl. II, fig. 1.)

The body pale yellowish ; punctuated on the head, the pronotum (except for an impunctate area on each side before the middle), on the scutellum, the clavus and corium (except for the medial transparent impunctate part of the corium), on the dorsal surface of the abdomen and on the body beneath ; yellowishly pubescent, feebly above and densely below ; the inner surfaces of the first two joints of the antennae, the eyes, the lateral margins before the eyes, the basal parts around the ocelli, the under surface, the medial line and the apex of the rostrum, an obscure short longitudinal fascia on each side of the pronotum laterally, a lateral fascia and a shorter medial fascia on the apical half of the abdomen above, an obscure and interrupted fascia across the pectoral region, a narrow fascia on each side of the abdomen below, the sternum (as far as can be seen in carded specimen), the apices of the larger dentate spines on the anterior femora, the under surfaces of the anterior tibiae and the apices of the tarsi dark brown to black.

The head about as long as broad across the comparatively small eyes, with the apex prominently produced ; ocelli behind the level of the eyes ; antenniferous tubercles prominent, bluntly produced ; first antennal joint the shortest, the second the longest, slightly longer than the fourth and third subequal joints ; rostrum extending slightly beyond the anterior coxae, with the first three joints subequal and shorter than the last ; pronotum about as broad as long, somewhat flattened posteriorly, medially transversely depressed, with the antero-lateral margins convex and broad, posterior lateral angles obtuse ; scutellum carinate apically, transversely elevated basally ; clavus broader apically than basally, apical suture being more than half the length of the scutellum ; hemelytra about as broad as the abdomen, not reaching the apex (♀) ; anterior femora incrassate, fusiform, armed beneath with a row of dentate spines (as in previous two species) ; anterior tibiae markedly curved, dentally ampliated apically.

Length, ♀ 6½ mm.

Breadth, ♀ about 1⅕ mm.

Hab.—Damaraland—Waterberg (M. Exp.).

Sub-fam. 5. **Aphaninae** Stål.

Div. MYODOCHARIA Stål.

Gen. PAROMIUS Fieb.

1861. Fieber, Eur. Hem., pp. 46 and 170.
1872. Stål, Oefv. Vet. Ak. Förh., No. 7, p. 51.

Stenocoris Rambur, Faun. Andal., p. 139, 1838.

Type.—*P. leptopoides* Baerenspr.

P. attenuatus Dall. S.A.M.

1852. Dallas, List, ii, p. 579 (*Rhyparochromus*).
1865. Stål, Hem. Afr., ii, p. 158 (*Plociomera*).

paganus Stål, Oefv. Vet. Ak. Förh., p. 34, 1855 (*Rhyparochromus*).
Hab.—Damaraland—Grootfontein, Otjituo, Waterberg (M. Exp.).
Ovamboland—Kambele Falls, Kunene R., Namakunde, Ondongua, Mafa (M. Exp.).

P. gracilis Ramb. S.A.M.

1838. Rambur, Faun. Andal., p. 139 (*Stenocoris*).
1861. Fieber, Eur. Hem., p. 171.
1886. Puton, Cat., p. 25.

nabiformis Costa, Cim. regni. Neap. Cent., ii (*Pachymerus*).
,, Baerensprung, Berl. Ent. Zeit., p. 331, pl. vi, fig. 3, 1859 (*Plociomerus*).
proximus Dallas, List, ii, p. 579, 1852 (*Rhyparochromus*).
,, Stål, Hem. Afr., ii, p. 157, 1865 (*Plociomera*).
natalensis Stål, Oefv. Vet. Ak. Förh., p. 34, 1855 (*Rhyparochromus*).
nabizoides Signoret, Ann. Soc. Ent. Fr., p. 951, 1860 (*Plociomerus*).
Hab.—Damaraland—Narebis (M. Exp.).
Ovamboland—Namakunde, Tamansu (M. Exp.).

MIGDILYBS n. gen.

Body subelongate; head about as long as the pronotum, slightly convex above and below, anteocular part about as long as the postocular part; eyes large; ocelli present; antenniferous tubercles prominent; antennae long, nearly as long as the body, with the first joint passing the apex of the head and the second the longest; rostrum long, first joint not reaching the base of the head; pronotum constricted and transversely depressed near the middle, with the anterior part convex, the pronotal collar narrow, with the lateral margins carinate, posterior lateral angles prominent, produced, either acutely vertically upwards and slightly backwards, or bluntly upwards and backwards; scutellum foveate centrally; clavus elongate, with the apical suture longer than the scutellum, and corial suture longer than the apical margin of the corium; corium longer than the membrane; membrane with five veins, the outer one small; abdomen beneath medially longitudinally carinate (♂), rounded apically, with a small apical tubercle (♂); legs long; anterior femora feebly incrassate, spined or unspined subapically below; anterior tibiae feebly clavate apically; posterior tibiae longer than femora; tarsi long, with the basal joint considerably elongated.

This genus is intermediate between *Paromius* and *Pamera*.

Type.—*M. furcifer* n. sp.

M. furcifer n. sp. S.A.M.

(Pl. III, figs. 7, 7*a*.)

Forma typica.—The body dark reddish brown; the base of the head, the abdomen above, the outer surfaces and the apices of the posterior lateral angles, the acetabula, the posterior upper part of the prostethium, the orifice of the odoriferous glands, the posterior angle of the metastethium, the connexivum, the abdomen beneath and the coxae paler, more brownish; the apex of the head, the first and second antennal joints and the base of the fourth, the rostrum and the legs pale yellowish brown; the outer basal half and the margins of the clavus, the apex of the scutellum, the basal part and a large subapical spot on the corium, a large spot on the apex and a faint line near the tip of the corium on the membrane yellowish white.

The head, including the eyes, about as broad as the anterior part of the pronotum, slightly dilated behind the eyes, the upper surface impunctate, finely rugulose; first antennal joint a little shorter than the head, slightly incrassate, second slender, longest, feebly clavate apically, third a little longer than the first, fourth about as long as or slightly shorter than the second, slightly compressed near its apex; rostrum extending to between the intermediate coxae; the first joint slightly shorter than the second, third shorter than the first, the fourth the shortest; pronotum a little broader than long, with the posterior part about as long as the anterior part, with the lateral margins carinate, with the surface (except for part of the anterior lobe) finely punctuated, the posterior lateral angles acutely prominent, produced vertically upwards and slightly backwards (Pl. III, fig. 7*a*); scutellum deeply foveate centrally, punctuated laterally and basally in the fovea; hemelytra broader than the abdomen, extending to the apex of the abdomen; clavus and corium longitudinally punctuated; pectoral region partly punctuated, partly finely rugulose; medial abdominal carina extending to about the apex of the fifth segment; a stiff bristle laterally on each side of the carina and near the apical margin of each abdominal segment (sometimes situated on a small callous area), another series laterally and apically on each segment; abdomen feebly pubescent ventrally, pilose dorsally on the apex; anterior femora feebly incrassate, armed on the under surface subapically with three small spines (♂); posterior tibiae armed on the under surfaces with a few "spine-like" bristles; basal joints of the tarsi more than twice as long as the two apical ones together.

Length of ♂ about 6 mm.

Breadth of ♂ about 1½ mm.

Hab.—S.-W. Africa ?.

* *M. furcifer* var. *capensis* nov. S.A.M.

Body dark reddish brown, similar to *furcifer*, but the first and second antennal joints and the base of the fourth, the rostrum, the neck, the posterior part of the lateral carinate margins, and two spots on the posterior lobe of the pronotum, the outer basal part and the margins of the clavus, the basal part and a large subapical spot on the corium, a small spot at the base near the apex of the corium, and a spot at the apex of the membrane, the acetabula, the posterior narrow margin of the metastethium, some lateral small callous spots on the abdomen beneath, the coxae and legs are lighter, pale yellowish white; the posterior lateral angles less prominent and not so acutely produced; spines absent on the anterior femora.

Length of ♂ 5½–6 mm.

Breadth of ♂ 1½ mm.

A Larval Stage.—The head, the third joint, and the apex of the fourth antennal joint, the pronotum, the scutellum, the apical half of the vestigial hemelytra and the pectoral regions like the adult dark reddish brown; the antennae, a fine line on each side of the head extending from above each eye obliquely backwards to the base and becoming confluent and continuous on the pronotum and scutellum, the basal half of the vestigial hemelytra, two broad transverse fascia across the abdomen and the apex of the abdomen, the posterior apical angle of the metastethium, the acetabula and the legs similar to the adult pale yellowish white; three transverse fascia alternating with the yellowish white fasciae on the abdomen, above and below scarlet red; pronotum not yet constricted, but the carinate margins and the incipient posterior lateral angles visible.

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* The specimens agree so closely with *M. furcifer forma typica*, except for the spined anterior femora and the less acute posterior lateral angles, that they may be considered as a variation and not as a definite new species.

Length of larval form about 4½ mm.
Breadth of larval form acr. pron. about 1 mm.
Breadth of larval form acr. abd. about 1½ mm.
Hab.—Cape Province, Cape Town (R. W. E. Tucker).

Gen. PAMERA Say.

1831. Say (*pro parte*), New. Harm. Ind. Dec.
1859. Say, Compl. Writ., i, p. 332.
1874. Stål, Enum., iv, pp. 144 and 147.

Plociomerus Amyot et Serville, Hem., p. 255, 1843.
,, Fieber, Eur. Hem., pp. 45 and 171, 1861.
Sub-gen. *Diplonotus* Stål, Oefv. Vet. Ak. Förh., No. 7, p. 51, 1872.
,, ,, Stål, Enum., iv, p. 152, 1874.
,, *Gyndes* Stål, *ibid.*, iv, p. 151, 1874.
,, ,, Stål, Stett. Ent. Zeit., xxiii, p. 314, note, 1862.
,, *Orthaea* Dallas, List, ii, pp. 532 and 580, 1852.
,, ,, Stål, Enum., iv, p. 149, 1874.

Type.—*P. vincta* Say.

P. pullata n. sp. S.A.M.

(Pl. III, fig. 8.)

The body velvety black, feebly whitishly pubescent on the head, the pronotum, the pectoral regions, and more densely on the abdomen below; the apex of the first antennal joint, the apex of the scutellum, the narrow margins of the clavus, the intramarginal part of the costal half, and a large subapical spot touching the costal margin on the corium, a spot on the apex of the membrane, a spot and the faint basal part near the apex of the corium as well as the veins in part on the membrane, the bases of the anterior femora, the trochanters and the bases of the posterior femora whitish; the abdomen above and the coxae shining dark reddish brown; the ocelli red, and the alae milky white.

The head large, subglobular, with the anteocular part longer than the postocular part, the surface rugulose, covered with scattered hairs; eyes large, protruding; first antennal joint short, slightly incrassate, extending slightly beyond the cephalic apex, the second longer than the first or the third, the third longer than the first, the fourth mutilated in the specimen; rostrum extending to the middle of the mesosternum, with the first joint about reaching the posterior margin of the eyes, but not the base of the head, the second joint subequal to the first, the third slightly shorter, the fourth still shorter; pronotum about as long as broad, with a distinct pronotal collar, with the anterior lobe subglobular and about as wide as the head across the eyes, with the posterior lobe shorter than the anterior one, the posterior lateral angles subprominent, obtusely rounded; scutellum slightly convex, subcarinate apically; hemelytra broader than the abdomen, not reaching the apex (♀); clavus and corium longitudinally punctuated, and pectoral regions feebly punctuated; abdomen ventrally medially feebly carinate, pilose ventrally and apically, with a long slender bristle laterally on each segment; anterior femora moderately incrassate, armed beneath with a large dentate spine and several smaller spines near their apices; anterior tibiae slightly ampliated apically, and all the tibiae armed with spine-like short bristles below; tarsi long, with the basal joint more than twice the length of the two apical ones together.

Length of ♀ 6½ mm.

Breadth of ♀ about 1½ mm.

Hab.—Ovamboland—Ondongua (M. Exp.).

Div. RHYPAROCHROMARIA Stål.

Gen. Polycrates Stål.

1865. Stål, Hem. Afr., ii, pp. 154 and 161.
1874. Stål, Enum., iv, pp. 155 and 157.

Type.—*P. consutus* Germ.

P. consutus Germ. S.A.M.

1837. Germar in Silberm. Rev., v, p. 139 (*Pachymerus*).
1874. Stål, Hem. Afr., ii, p. 161.
curvipes Stål, Oefv. Vet. Ak. Förh., p. 34, 1855 (*Rhyparochromus*).
Hab.—Damaraland—Otjituo, Windhuk (M. Exp.).
Deutsch-Südwestafrika (after Seiner).

Div. APHANARIA Stål.

Gen. Aphanus L. de Castelnau.

1832. L. de Castelnau, Essai Hem., p. 35.

Pachymerus Lepelletier et Serville, Encycl., x, p. 322, 1825.
,, Stål, Oefv. Vet. Ak. Förh., No. 7, p. 57, 1872; Lepelletier et Serville.
,, Stål, Enum., iv, pp. 159 and 160, 1874.
,, Reuter, Rev. d'Ent., iv, p. 221, 1885.
Rhyparochromus Fieber, Europ. Hem., pp. 50 and 193, 1861.
Beosus Fieber, T. C., pp. 51 and 196, 1861.
Sub-gen. *Microtomidens* Reuter, Rev. d'Ent., iv, p. 221, 1885.
,, *Phorcinus* Stål, Enum., iv, p. 160, 1874.
,, *Graptopeltus* Stål, Oefv. Vet. Ak. Förh., No. 7, p. 57, 1872.
,, ,, Reuter, Rev. d'Ent., iv, p. 223, 1885.
,, *Liolobus* Reuter, *loc. cit.*, p. 224, 1885.
,, *Bleteogonus* Reuter, *loc. cit.*, p. 225, 1885.
,, *Xanthochilus* Stål, Oefv. Vet. Ak. Förh., No. 7, p. 57, 1872.
,, ,, Reuter, Rev. d'Ent., iv, p. 227, 1885.
,, *Melandiscus* Stål, Oefv. Vet. Ak. Förh., No. 7, p. 57, 1872.
,, *Raglius* Stål, *loc. cit.*, 1872.
,, *Naphius* Stål, Enum., iv, p. 160, 1874.
,, *Elasmolomus* Stål, Oefv. Vet. Ak. Förh., No. 7, p. 58, 1872.
,, *Ragliodes* Reuter, Rev. d'Ent., iv, p. 229, 1885.

Type.—*A. pedestris* Panz.

A. apicalis Dall. S.A.M.

1852. Dallas, List, ii, p. 562 (*Rhyparochromus*).
1865. Stål, Hem. Afr., ii, p. 165 (*Beosus*).

turgidifemur Stål, Oefv. Vet. Ak. Förh., p. 32, 1855 (*Rhyparochromus*).

nigromaculatus Stål, *loc. cit.*, p. 33, 1855.

Hab.—Namaqualand—Kubub, Gubub-Aar (Schultze).
Damaraland—Narebis, Otjituo (M. Exp.), Otjiwarongo (J. Brown), Windhuk (Gentz), Otavi, Omaruru (Seewald).
Ovamboland—Namakunde, Okualuthi (M. Exp.).

A. pedestris Panz. S.A.M.

1791. Panzer, Faun. Germ., p. 92 (*Lygaeus*).
1829. Schilling, Beitr., pl. v, fig. 7.
1831. Hahn, Wanz. Ins., i, p. 62, fig. 38 (*Pachymerus*).
1861. Fieber, Eur. Hem., p. 195 (*Rhyparochromus*).

bardanae Preyssler, Verz., p. 102, fig. 14, 1791.
alboacuminatus Goeze, Beytr., ii, p. 266, 1778.
,, Reuter, Rev. d'Ent., iv, p. 228, 1885 (*Pachymerus*).
apicaris Fourcroy, Ent. Par., p. 204, 1785.
cinereus Gmelin, Syst. Nat., p. 2184, 1788.
mundulus Dohrn, Stett. Ent. Zeit., p. 160, 1860 (*Rhyparochromus*).
insignis Boheman, Nya. Sver. Hem., p. 53, 1852.
mendicus Stål, Enum., iv, p. 161, 1874 (*Elasmolomus*).
caffer Stål, Oefv. Vet. Ak. Förh., p. 33, 1855 (*Rhyparochromus*).
,, Stål, Hem. Afr., ii, p. 166, 1865 (*Beosus*).

Hab.—Damaraland—Windhuk (Purch., 1915).

Gen. DIEUCHES Dohrn.

1860. A. Dohrn, Stett. Ent. Zeit., xxi, p. 160.
1872. Stål, Oefv. Vet. Ak. Förh., No. 7, p. 58.
1874. Stål, Enum., iv, pp. 159 and 161.
1885. Reuter, Rev. d'Ent., iv, p. 220.

Beosus Bergroth, Rev. d'Ent., xii, p. 202, 1893.
Ischnotarsus (*pro parte*) Fieber, Europ. Hem., pp. 50 and 191, 1861.
Methocus Scott, Hem. from Japan in Ann. Mag. Nat. Hist., iv, p. 433, 1874.

Type.—*D. syriacus* Dohrn.

D. armipes Fabr. S.A.M.

1794. Fabricius, Ent. Syst., iv, p. 164.
1803. Fabricius, Syst. Rhyng., p. 231 (*Lygaeus*).

1868. Stål, Hem. Fabr., i, p. 79 (*Beosus*).
1886. Puton, Cat., p. 29.
1888. Reuter, Rev. Syn., p. 208.

albostriatus Fabricius, S. Rhyng., p. 229, 1803.
,, Stål, Hem. Afr., ii, p. 168, 1865.
Ragusae Puton, Cat., 1886, p. 29, 1875.
Hab.—Damaraland—Tsumeb (E. Köchig).
Ovamboland—Namakunde, Ondongua (M. Exp.), Omaramba (Eriksson).

D. herero Bredd. S.A.M.

1913. (Breddin) Schumacher, Denkschr. Ges. Jena, xvii, p. 70.

var. *fusculus* (Breddin), *loc. cit.*, p. 70, 1913.
var. *picus* (Breddin) Schumacher, *loc. cit.*, p. 71, 1913.
Hab.—Damaraland—Otjimbingwe (Schultze).

var. *fusculus* Bredd. S.A.M.

Hab.—Damaraland—Windhuk (M. Exp.); also
Small Namaqualand—Steinkopf (Schultze).
Cape Province—Prieska, Cape Town.

var. *picus* Bredd.

Hab.—Damaraland—Gobabis (Beetz).

Gen. LETHAEUS Dall.

1852. Dallas, List, ii, pp. 532 and 557.
1861. Fieber, Eur. Hem., pp. 50 and 193.
1872. Stål, Oefv. Vet. Ak. Förh., No. 7, p. 59.
1874. Stål, Enum., iv, p. 164.

Coptoneurus Puton, Ann. Soc. Ent. Fr., p. 141, 1869.
Mimicus Douglas and Scott, Ent. Month. Mag., v, p. 65, 1868.

Type.—*L. africanus* Dall.

L. tartareus Stål. S.A.M.

1865. Stål, Hem. Afr., ii, p. 174.

africanus Dallas (*pro parte*), List, ii, p. 557.
Hab.—Ovamboland—Omaramba (Eriksson).

L. termitarum (Bredd.).

1913. Breddin (Schumacher, Denkschr. Ges. Jena, xvii, p. 72).
Hab.—Damaraland—Windhuk (Techow).

Gen. NEOLETHAEUS Dist.

1909. Distant, Ann. Mag. Nat. Hist. (8), iii, p. 340.
1910. Distant, Fauna Brit. Ind. Rhynch., Append., v, p. 79.

Type.—*N. typicus* Dist.

N. aethiopicus n. sp. S.A.M.

(Pl. IV, fig. 1.)

The body reddish brown to chocolate brown; shining on the head, the anterior part of the pronotum and the under surfaces; darker on the head, the apex of the second, the basal half of the third and the fourth joint of the antenna, the anterior and impunctate part on the pronotum, some irregular patches on the clavus and corium, especially medially near the inner apical angle on the latter, on the under surfaces of the body, the spines on the anterior femora, the spines, tubercular elevations and under surfaces of the two posterior femora; punctuated medially on the head between the eyes and obliquely laterally, on the extreme anterior part, the lateral and posterior half of the pronotum, on the scutellum, the clavus and corium, the under surface of the head and the pectoral regions; the apex of the third antennal joint, the posterior lateral angles and three spots (sometimes obscure) on the posterior margin of the pronotum (one medially and one on each side near the posterior angles), two obscure spots on the scutellum, three spots on the clavus, some small callous spots on the veins, and some irregular spots on the corium, the basal half of the expanded costal margin and the narrow apical part of the costal margin albescent; the narrow anterior margin, the lateral expanded margins, and the slightly carinate medial line on the pronotum, the carina on the scutellum, the levigate lines on the clavus and corium (especially along the sutures and margins of these), the apices of the femora and often the tibiae and tarsi pallid, yellowish white; the membrane bronzy.

The head triangular, about as broad across the eyes as long, with the apex rather prominent, the basal and anterior part impunctate, with the lateral parts in front of the eyes feebly yellowishly pubescent, with a long slender hair on each side at about the anterior level of the eyes; the first antennal joint slightly incrassate, extending beyond the cephalic apex, armed basally with two short bristles, with a single prominent one apically, the second joint the longest, the third slightly shorter than the second, longer than the fourth, the fourth about equal to the first; rostrum extending a little beyond the posterior coxae, with the first joint reaching the base of the head, slightly shorter than the second and third subequal joints, the fourth the shortest; pronotum subquadrate, longer than broad, with its lateral margins slightly expanded and more or less obliquely straight, with the surface coarsely punctuated posteriorly behind the slightly elevated anterior part, with a bristle on each side on the anterior margin near the anterior angles; scutellum slightly depressed centrally, slightly carinate apically; hemelytra broader than the abdomen, just reaching the apex; costal region basally slightly expanded, impunctate; membrane with four veins, the outer three transversely connected as in *Lethaeus*; abdomen underneath finely rugulose, with some ventral and apical bristles; femora incrassate, the posterior ones more so; anterior femora armed with long spine-like bristles and four small apical spines; posterior ones spinose, granular (owing to small blunt elevations); anterior tibiae spinose laterally and below, and posterior ones spinose like those of the *Cydninae*.

Length of ♂ 6–6$\frac{1}{3}$ mm., of ♀ 6$\frac{1}{2}$–7 mm.

Breadth of ♂ acr. pron. 2 mm., ♀ 2 mm.

Breadth of ♂ acr. abd. about 2$\frac{1}{4}$ mm., ♀ about 2$\frac{1}{2}$ mm.

Hab.—Ovamboland—Mafa, Namakunde (M. Exp.); also
Transvaal—Acornhoek (M. Exp.).

Fam. **PYRRHOCORIDAE** Stål.

Sub-fam. **Pyrrhocorinae** Stål.

Gen. PROBERGROTHIUS Kirk.

1904. Kirkaldy, Entomologist, p. 280.

Odontopus L. de Castelnau, Ess. Hem., p. 137, 1832.
,, Stål, Enum., i, pp. 102 and 109, 1870.
,, Distant, Fauna Brit. Ind. Rhynch., vol. ii, p. 108, 1903.

Type.—*P. sexpunctatus* de Castelnau.

P. sexpunctatus de Castelnau. S.A.M.

1832. L. de Castelnau, Ess. Hem., p. 37, pl. liii, fig. 5 (*Odontopus*).
1843. Amyot et Serville, Hem., p. 271.
1849. Guerin in Lefebvre, Voy. en. Abyss. Ins., p. 341.
1865. Stål, Hem. Afr., iii, p. 6 (*Odontopus*).

Hab.—Damaraland—Damaraland (M. Exp.), Tsumeb (Köchig).
Ovamboland—Otjimbumbe, Kunene R. (M. Exp.).

Gen. DERMATINUS Stål.

1853. Stål, Oefv. Vet. Ak. Förh., p. 260.
1865. Stål, Hem. Afr., iii, p. 12.
1870. Stål, Enum., i, pp. 103 and 114.

Type.—*D. limbifer* Stål.

D. limbifer Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 36.
1865. Stål, Hem. Afr., iii, p. 12.

Hab.—Ovamboland (Eriksson).

D. tartareus Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 36.
1865. Stål, Hem. Afr., iii, p. 12.

truncatipennis Fallen, Rev. d'Ent., x, p. 8, 1891 (*Pyrrhocoris*).
,, Bergroth, Rev. d'Ent., xi, p. 262, 1892.

Hab.—Damaraland—Otjiwarongo (M. Exp.).
Ovamboland—Namakunde (M. Exp.), Omaramba (Eriksson).

Winged ♀♀: Pl. III, fig. 6. S.A.M.

The two female specimens in our collection agree in details with our determined apterous specimens of *D. tartareus* Stål, except for the fact that they are winged. As in the winged forms of other apterous *Pyrrhocoridae* the corium is definitely separated from the clavus and the apical margin passes insensibly into the membrane. The membrane just reaches the apex of the abdomen and the venation is reticulate like that of the winged forms of *Scantius forsteri* Fabr., and characterised by fairly large basal cells.

Length of winged ♀ 7–8 mm.

Breadth of winged ♀ acr. pron. $2\frac{1}{3}$–$2\frac{1}{2}$ mm.

Breadth of winged ♀ acr. abd. 3–3⅓ mm.

Hab.—Ovamboland—Otjimbumbe, Kunene R. (M. Exp.); also
Transvaal—Florida (M. Exp.).

Gen. ADERRHIS Bergr.

1906. Bergroth, Ann. Soc. Ent. Belg., 50, No. 7, p. 199.

Type.—*A. pulla* Bergr.

A. pulla Bergr. S.A.M.

(Pl. IV, figs. 3, 3*a*, and 3*b*.)

1906. Bergroth, Ann. Soc. Ent. Belg., 50, No. 7, p. 200.

Hab.—Ovamboland—Omaramba (Eriksson); also
Natal—Durban.

Both specimens are males. This species probably has an extended distribution, for Bergroth first described it from the island of Pemba, East Africa.

Gen. SCANTIUS Stål.

1865. Stål, Hem. Afr., iii, p. 10.
1870. Stål, Enum., i, pp. 103 and 116.

Type.—*S. forsteri* Fabr.

S. forsteri Fabr. S.A.M.

1781. Fabricius, Spec. Ins., ii, p. 368.
1787. Fabricius, Mant. Ins., ii, p. 302.
1788. Gmelin, Syst. Nat., I, iv, p. 2177 (*Cimex*).
1848. Herr. Schaeffer, Wanz. Ins., vii, p. 102, fig. 871 (*Pyrrhocoris*).
1865. Stål, Hem. Afr., iii, p. 10.
1888. Reuter, Rev. Syn., p. 216.

clavimanus Fabricius, Spec. Ins., ii, p. 368.
,, Fabricius, Mant. Ins., ii, p. 302, 1787 (*Cimex*).
,, Fabricius, Syst. Rhyng., p. 231, 1803 (*Lygaeus*).
,, Herr. Schaeffer, Wanz. Ins., viii, p. 102, fig. 871, 1848 (*Pyrrhocoris*).
deustus Thunberg, Nov. Ins. sp., ii, p. 58, 1784.
,, Gmelin, Syst. Nat., I, iv, p. 2168, 1788 (*Cimex*).
,, Thunberg, Hem. Rostr., cap. iv, p. 3, 1822 (*Lygaeus*).
centralis Signoret, Ann. Soc. Ent. Fr., p. 952, 1860 (*Dermatinus*).

Hab.—Ovamboland—Mafa, Namakunde (M. Exp.), Omaramba (Eriksson).

Gen. Dysdercus Am. et Serv.

1843. Amyot et Serville, Hem., p. 272.
1865. Stål, Hem. Afr., iii, p. 13.
1870. Stål, Enum., i, pp. 103 and 117.
Astemma L. de Castelnau, Ess. Hem., p. 37, 1832.
Sub-gen. *Piezodora* Signoret, Ann. Soc. Ent. Fr., p. 953, 1860.
,, ,, Stål, Enum., i, p. 117, 1870.

Type.—*D. cingulatus* Fab.

D. superstitiosus Fabr. S.A.M.

1775. Fabricius, Syst. Ent., p. 719.
1778. Goeze, Ent. Beytr., ii, p. 256.
1781. Fabricius, Spec. Ins., p. 364.
1787. Fabricius, Mant. Ins., ii, p. 299.
1803. Fabricius, Syst. Rhyng., p. 221 (*Lygaeus*).
1865. Stål, Hem. Afr., iii, p. 15.

albicallus Schaum, Peters' Reis. Moss. Ins., p. 45, 1862.
koenigii Wolff, Ic. Cim., i, p. 28, 1800 (*Lygaeus*).
nigrofasciatus Stål, Oefv. Vet. Ak. Förh., p. 36, 1855.
,, Stål, Hem. Afr., iii, p. 14, 1865.

Hab.—Damaraland—Nuragas (M. Exp.), Grootfontein-Namutoni (Seewald).
Ovamboland—Okavango R., Omaramba (Eriksson).

Fam. **TINGIDIDAE** Stål.

Sub-fam. **Tingitinae** Stål.

Div. SERENTHIARIA Stål.

Mafa n. gen.

Body narrow, elongated; head large, with its apex slightly produced beyond the bases of the antennae, with a blunt outwardly directed spine behind each antenna and each eye, with the base moderately thickened, with a curved groove on each side extending from this collar-like thickening to the base of the antenna; eyes slightly sunk in the head; ocelli absent; antennae long, pilose, with the first and second joints short and incrassate, with the third joint the longest; buccal laminae elevated, punctuated laterally, contiguous apically in front of the head; rostrum comparatively short; pronotum with the lateral margins ampliated and areolated, its posterior part acutely produced, covering the scutellum completely, with the anterior margin deeply concave and the anterior lateral angles acute, the surface distinctly punctuated (except for an impunctate callous area anteriorly on each side), longitudinally tricarinate, with the medial carina prominent anteriorly and posteriorly along its entire length, and the lateral carinae obsolete anteriorly; hemelytra areolated, long, with parallel sides, broader than the abdomen, projecting slightly over and laterally under it, extending considerably beyond its apex; costal margin slightly ampliated; costal and subcostal areas not so well defined as the discoidal area; pectoral region turgid, punctuated laterally on the prostethium; pro- and mesosterna sulcated; anterior legs further removed from the intermediate ones than the posterior ones; femora slightly longer than the tibiae; tarsi with the first joint much shorter than the second.

This genus is allied to *Lullius*.

Type.—*M. lanceolata* n. sp.

M. lanceolata n. sp. S.A.M.

(Pl. IV, fig. 4.)

The head, the eyes, the apical part of the rostrum, the anterior part of the pronotum, the pectoral regions, and the abdomen black; the antennae and the legs golden yellow; the fourth antennal joint, the rostrum, the anterior margin of the pronotum, the posterior margin of the prostethium, the coxae, the apices of the tibiae and the tarsi deeper, more brownish yellow; the buccal laminae, the lateral ampliated margins, the anterior part of the medial carina and the posterior carinae on the pronotum, the hemelytra, the anterior margin of the prostethium, and the narrow apical upper part of the metastethium lemon or sulphur yellow; the posterior part of the pronotum and the discoidal areas slightly darker, more greenish. The upper surface of the head feebly punctuated; antennae about half as long as the body, the first and second joints subglobular, of equal length, the third the longest, and the fourth slightly more than half the length of the third; rostrum strap-like up to the third joint, extending to between the anterior coxae, with the first and second subequal joints each about as long as the third and fourth subequal joints together; pronotum slightly convex medially, depressed anteriorly on each side of the medial carina; areolae on the hemelytra pit-like, dense basally, medially and laterally on the costal, the subcostal, and discoidal areas, more reticulate and coarser apically; hemelytra attenuated and bluntly pointed apically, projecting considerably beyond the abdomen; discoidal area about as wide as the costal and subcostal areas together; alae opalescent, vitreous, projecting beyond the abdominal apex; lateral pectoral and lateral basal abdominal regions silvery pubescent; genital segment, the apex of the abdomen and the legs finely pilose; surface of the abdomen beneath shining and very finely rugulose; intermediate femora and tibiae slightly shorter than the anterior and posterior ones.

Length of ♂ and ♀ to tip of hemelytra 3–3·5 mm.

Breadth of ♂ and ♀ about 0·5 mm.

Hab.—Ovamboland—Mafa (M. Exp.).

Div. TINGIDARIA Stål.

Gen. Monanthia Lep. et Serv.

1825. Lepelletier et Serville, Encycl. Meth., x, p. 653.
1874. Stål, Oefv. Vet. Ak. Förh., No. 3, p. 58.

Type.—*M. echii* Schranck.

M. mitrata Dist. S.A.M.

1905. Distant, Tr. S. Afr. Ph. Soc., xiv, p. 433, pl. viii, fig. 14.

Hab.—Damaraland—Omaruru (J. Brown).

Fam. **HENICOCEPHALIDAE** Stål.

Gen. Henicocephalus Westwd.

1837. Westwood, Tr. Ent. Soc. Lond., p. 22.
1889. Bergroth, Rev. d'Ent., viii, p. 319.

Systelloderus Blanchard, Gay, Hist. d'Chile, vii, p. 224, 1852.
Oncylocotis Stål, Oefv. Vet. Ak. Förh., xii, p. 44, 1855.
Enicocephalus Stål, Rio Hem., i, p. 81, 1858.
Dicephalus Kirby, Cat. Ceyl. Hem., p. 117,1891; Linn. S. Zool., xxiv.
Henschiella Horvath, Rev. d'Ent., vii, p. 169, 1888.
Hymenodectes, *Hymenocoris* Uhler, Maryland Acad. Sc., 1892.

Type.—*H. flavicollis* Westwd.

H. nasutus Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 44.
1865. Stål, Hem. Afr., iii, p. 166.

Hab.—Damaraland—Omaruru (Seewald).
Ovamboland—Kambele Falls and Otjimbumbe, Kunene R. (M. Exp.).

Fam. **HYDROMETRIDAE** Stål.

Sub-fam. **Hydrometrinae.**

Gen. HYDROMETRA Latr.

1797. Latreille, Prec. des Caract. gen. des. ins., p. 86.
1824. Curtis, Brit. Ent., i, p. 32.
1825. Lepelletier et Serville, Encycl. Meth., x, p. 265.
1832. L. de Castelnau, Essai, p. 22.
1865. Stål, Hem. Afr., iii, p. 166.
1879. Bergroth, Hem. Argent., p. 181.

Limnobates Burmeister, Handb., ii, p. 210, 1835.
,, Fieber, Eur. Hem., p. 103, 1861.
,, Douglas and Scott, Brit. Hem., p. 575, 1865.
,, J. Sahlberg, Not. Faun. Fl. Fenn., xiv, p. 269, 1875.

Type.—*H. stagnorum* Linn.

H. ambulator Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., xii, p. 45.
1865. Stål, Hem. Afr., iii, p. 166.

Hab.—Ovamboland—Mafa, Ondongua, Otjimbumbe, Kunene R., Ukualuthi (M. Exp.).

Fam. **GERRIDAE** (Kirk.) Amy. et Serv.

(=Sub-fam. **Gerrinae** Bianchi.)

Div. GERRINARIA Bianchi.

Gen. GERRIS Fabr.

1794. Fabricius, Ent. Syst., iv, p. 188.
1843. Amyot et Serville, Hem., p. 414.

Hydrometra Fabricius, Syst. Rhyng., p. 256, 1803.

Hydrometra Fieber, Hem., pp. 33 and 106, 1861.
„ J. Sahlberg, Not. Faun. Fl. Fenn., xiv, p. 248, 1875.
Aquarius Schellenberg, Land. u. Wasserw., p. 25, 1800.
Sub-gen. *Tenagogonus* Stål, Oefv. Vet. Ak. Förh., x, p. 263, 1865.
„ „ Stål, Hem. Afr., iii, p. 168, 1865.
„ *Limnometra* Mayr, Reis. Nov. Hem., p. 174, 1866.
„ *Limnogonus* Stål, Hem. Fabr., i, p. 132, 1868.
„ *Limnotrechus*, *Limnoporus* and *Hygrotrechus* Stål, Oefv. Vet. Ak. Förh., pp. 396 and 397, 1868.
„ *Lamprotrechus* Reuter, Oefv. Finsk. Vet. Soc. Förh., xxv, p. 40, 1882.

Type.—*G. lacustris* Linn.

G. swakopensis Stål. S.A.M.

1858. Stål, Oefv. Vet. Ak. Förh., p. 318.
1865. Stål, Hem. Afr., iii, p. 169 (*Tenagogonus*).

Hab.—Namaqualand—Besondermaid (Schultze).
Damaraland—Swakop (after Stål), Waterberg-Otanjande (Seewald).
Ovamboland—Otjimbumbe, Kunene R. (M. Exp.).

Fam. **REDUVIIDAE** Stål.

Sub-fam. 1. **Holoptilinae** Stål.

Gen. HOLOPTILUS Lepel. et Serv.

1825. Lepelletier et Serville, Encycl. Meth., x, p. 280.
1832. Lap., Ess. Hem., pp. 7 and 50.
1843. Amyot et Serville, Hem., p. 320.
1865. Stål, Hem. Afr., iii, p. 45.
1874. Stål, Enum. Hem., iv, p. 5.

Lasiocera Lap., Ess. Hem., p. 47, 1832.

Type.—*H. ursus* Lepel. et Serv.

H. vulpes Stål. S.A.M.

1865. Stål, Hem. Afr., iii, p. 46.
1874. Westwood, Thesaurus Ent., p. 193, pl. xxxvi, fig. 6.

Hab.—Namaqualand—Kalkfontein (J. S. Brown).
Damaraland—Windhuk (Techow Heller).

Sub-fam. 2. **Emesinae** Amy. et Serv.

Gen. TINNA Dohrn.

1860. A. Dohrn, Linn. Ent., xiv, pp. 213 and 245.
1865. Stål, Hem. Afr., iii, pp. 163 and 164.
1874. Stål, Enum. Hem., iv, pp. 93 and 95.

Type.—*T. gracilis* Stål.

T. serratifemora n. sp. S.A.M.

(Pl. IV, figs. 5 and 5*a*.)

Apterous; the body narrow and elongated; the head, meso- and metathorax, the scutellum, the irregular blotches on the dorsal surface of the abdomen, the superior surfaces of the anterior femora, the anterior tibiae, the anterior part and spine on the prostethium, the meso- and metastethium, the meso- and metasterna (as far as can be seen in the carded specimens), the lateral spots to the abdominal margin and connexivum at the apices of the segments, the subapical part of the abdomen, an obscure lateral fascia on each side of the abdomen abbreviated anteriorly, and the subapical parts of the intermediate and posterior femora dark brown; the antennae (first joints), the under surface of the head, the rostrum, the apices of the spines on the head and femora, the anterior part of the mesostethium, the four tubercular elevations on the mesothorax, the apex of the scutellum, the two posterior coxae, and the intermediate and posterior legs lighter; pronotum, prostethium, prosternum, some lateral patches, the small tubercles and an obscure medial line on the dorsal surface of the abdomen, the spines on the under surface of the head, the anterior coxae, trochanters, the under surfaces and apices of the anterior femora, the bases of the anterior tibiae, the anterior claw-like tarsi, the spines on the anterior trochanters and femora, the abdomen beneath, the lateral spots on the margin of the abdomen and connexivum occupying the basal parts of the segments, the apex of the abdomen, the apices of the two posterior femora, and the bases of the tibiae yellowish white.

The head large, globular, with a medial transverse depression between the eyes, with the postocular globular part slightly longer than the anteocular part, the anterior lateral part armed on each side at the base of the rostrum with three spines (one directed forwards, a larger one directed downwards, and a very small one near the eye), the under surface below the eyes armed with four stout spines (between which the rostrum passes); rostrum three-jointed, with the apical joint about as long as the basal and longer than the second; pronotum constricted behind the middle, with the posterior lobe globular and narrower than the head; prostethium with a stout spine anteriorly on each side; mesothorax with the anterior part narrow, with a faint medial sulcation, with the lateral margins carinate, with the medial part elevated, and with four tubercular elevations on it; scutellum small, medially carinate; abdomen with the basal part narrower than the head, the lateral margins reflected upwards, with a tubercle medially on the apical margin of each segment dorsally, with the dorsal, lateral, and ventral surfaces rugulose; anterior coxae elongated; anterior femora incrassate, armed beneath with more or less two rows of spines; anterior trochanter armed with a spine; anterior tibiae armed with spines apically; anterior tarsi claw-like (anterior tibia and tarsus together about as long as anterior femur); posterior femora long, slightly dilated apically; posterior tibiae longer than the femora; tarsi three-jointed, with the basal joint the longest.

Length about 6 mm.

Max. breadth about 1 mm.

Hab.—Damaraland—Windhuk (M. Exp.).

Sub-fam. 3. **Stenopodinae** Stål.

Gen. ONCOCEPHALUS Klug.

1830. Klug, Symb. Phys., ii.
1861. Fieber, Eur. Hem., pp. 42 and 151.
1865. Stål, Hem. Afr., iii, p. 155; sub-gen. *Baebius*, p. 154, *loc. cit.*
1883. Reuter, Monogr. Act. Soc. Sc. Fenn., xii, p. 675.

Spilalonius Stål, Enum. Hem., ii, p. 123, 1872.

Type.—*O. notatus* Klug.

O. annulipes Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 44.
1865. Stål, Hem. Afr., iii, p. 158.
1882. Reuter, Monogr., p. 34, pl. i, fig. 18.

Hab.—Damaraland—Tsumeb (E. Köchig).

O. clavipes n. sp. S.A.M.

(Pl. IV, fig. 6.)

The head, the antennae, the apex of the second rostral joint, the disc of the posterior pronotal lobe and five longitudinal fasciae (the extreme lateral ones obscure) extending from posterior lobe on to the anterior lobe and abbreviated anteriorly, the scutellum, the prostethium, the meso- and metastethium, the apical region of the abdomen on the ventral surface, some longitudinal fasciae or spots on the superior surfaces of the anterior femora, the apices of all the femora, a medial annulation on the posterior femora, the bases and apices as well as a medial annulation on all the tibiae black; the clavus, the medial inner part of the corium, an obscure transverse fascia extending from the middle of corium to the costal margin but not reaching it, the membrane and the dorsal surface of the abdomen infuscated; the bases of the antennae, the basal half of the rostrum, the anterior pronotal lobe, the broad lateral margin and the narrow posterior margin on each side of the posterior pronotal lobe, the upper lateral margin and the upper basal part of the prostethium, a narrow outer basal margin of the clavus, the broad costal and apical regions of the corium, the prosternal sulcation, the meso- and metasterna, the ventral surface of the abdomen, the connexivum, the coxae, the bases and under surfaces of the anterior femora, the two posterior femora, and all the tibiae yellowish white; the posterior lateral angles of the pronotum, the costal and subcostal veins of the coria, and the margins of the abdomen and connexivum reddish yellow or orange; the basal and outer apical margins of the membrane and the narrow fasciae along its veins whitish; the apices of the anterior tibiae and the tarsi testaceous.

The head with the anteocular part cylindrical and slightly longer than the postocular part, with two spines between the bases of the antennae and a spine behind each antenniferous tubercle, with some tubercles carrying bristles laterally behind the eyes and some smaller ones on the anteocular region; eyes large; ocelli on a postocular elevation; the antennae pilose, the first joint slightly incrassate, shorter than the head, extending beyond the apex, second about one and two-thirds the length of the first, the rest mutilated in specimen; rostrum with the first joint subequal to the second; pronotum constricted at about the middle, with the anterior part narrower than the head with the eyes; anterior pronotal lobe sulcated medially from about the middle to a medium pit-like depression on the transverse constriction, with the anterior margin sinuate and crenulate, the anterior angles tubercularly prominent, the lateral margins straight and crenulate, surface obscurely granular; posterior pronotal lobe granular, slightly foveate on each side near the slightly prominent somewhat recurved posterior lateral angles; prostethium prominently bituberculate anteriorly; prosternal sulcation with a row of small bristle-carrying tubercles on each side; scutellum elevated, with its apex horizontally produced into a spine; apical part of clavus and the medial parts of the coria transversely rugulose; hemelytra slightly narrower than the abdomen; metasternum and the abdomen below medially carinate (carina on abdomen extending to about the apex of the fifth abdominal segment); connexivum narrow basally, broader apically, deeply incised at its apex; anterior trochanters granularly tuberculate; anterior femora incrassate, longitudinally ridged below, the ridges being armed with alternating blunt spines and bristle-carrying tubercles; anterior tibiae about as long as the femora, longitudinally pilose.

Length, 12–13 mm.

Breadth acr. pron. about 3 mm.

Breadth acr. abd. about 3–3·6 mm.

Hab.—Great Namaqualand—Kalkfontein (J. S. Brown).
Little Namaqualand—Upington (M. Exp.), Zak R. (Wilson).

Gen. BAEBIUS Stål.

1865. Stål, Hem. Afr., iii, p. 154.

Type.—*B. caffer* Stål.

B. caffer Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 44 (*Stenopoda*).
1865. Stål, Hem. Afr., iii, p. 155.
1882. Reuter, Monogr. in Act. Soc. Sc. Fenn., xii, p. 15, pl. i, fig. 3.

Hab.—Damaraland—Grootfontein, Tsumeb, Windhuk (M. Exp.).

B. denticulatus Stål. S.A.M.

1874. Stål, Enum., iv, p. 87.
1882. Reuter, Monogr. in. Act. Soc. Sc. Fenn., xii, p. 13, pl. i, fig. 2.

Hab.—Ovamboland—Omaramba (Eriksson).

Sub-fam. 4. **Salyavatinae** Stål.

TRITAVUS n. gen.

Apterous; body subelongate, with hard integument; head subglobular, with the anterior end distinctly produced into a raised, blunt, spine-like projection between the antenniferous tubercles, with the anteocular part shorter than the postocular part, transversely impressed behind the eyes; ocelli absent; antennae four-jointed, with the first joint slightly incrassate, extending considerably beyond the apex of the head, with the second the longest; rostrum short, stout, three-jointed, with the first joint much longer than the two apical ones together, but not reaching the base of the head, with the second dilated; pro-, meso- and metanota well defined; pronotum globular; scutellum absent (unless the medial ridge on the mesonotum represents it); hemelytra absent; abdomen composed of six distinct segments (excluding genital segment), medially dorsally carinate on the first segment, ventrally basally subcarinate (♀), medially ventrally carinate (♂); prosternum sulcated; metasternum globularly elevated, produced posteriorly into two small tubercles; legs well developed; the coxae powerful, more or less globular, the anterior ones being the most powerful, with their inferior and lateral surfaces often raised into a tubercle; femora incrassate, the anterior ones being more so; anterior and intermediate tibiae with spongy fossae; posterior femora, tibiae and tarsi longer than anterior ones; anterior tarsi two-jointed; posterior tarsi three-jointed, with the apical joint about as long as the two basal ones together.

♂ slightly smaller than ♀, with the abdomen ventrally longitudinally carinate.

♀ larger, with the abdomen more distended and ventrally only basally subcarinate, with the genitalia (Pl. V, fig. 7*a*) composed of two lateral plates, a dorsal plate, with the genital orifice and its attendant structures in the form of a longitudinal basal slit and a transverse median aperture.

Eggs (Pl. V, fig. 7*b*) hard, subglobular, operculated, with a slight depression on each side near the subtriangular opening; shell chitinous, feebly ornamented with a mosaic pattern; operculum plug-like, non-chitinous, foam-like.

This genus is related to *Lisarda*. It shows either primitive or highly modified characters, probably as a result of its mode of life. The insects were found under stones by Mr. R. F. Lawrence, and are most likely predatory in habits. The maturity of the specimens was established on dissection by the presence of numerous eggs in the body-cavity of a female.

Type.—*T. saxatilis* n. sp.

T. saxatilis n. sp. S.A.M.

(Pl. V, figs. 7, 7*a*, and 7*b*.)

The body feebly yellowishly pubescent, yellowish earthy brown above, with the under surfaces and the legs paler, more ochraceous; the apex of the second antennal joint, the eyes, the posterior part of the head behind the anterior margin of the eyes, the under surface of the head, the medial cruciform pattern, and the postero-lateral part on the pronotum, three finger-like radiating callous fasciae on each side of the medial ridge and the lateral margins on the mesonotum, two medial longitudinal fasciae and the lateral margins on the metanotum, the medial basal part and the carina, a broad medial longitudinal interrupted fascia, a small oblique fascia on each side at the bases of the segments and the segmental sutures on the dorsal surface of the abdomen, the apical angles of the segments on the connexivum, the anterior, posterior margin, and the sulcation on the prosternum, a broad lateral fascia on each side of the pectoral and abdominal regions below (sometimes interrupted on the abdomen), the posterior margin and tubercles on the metasternum, a medial, ventral, longitudinal line on the abdomen, the male genital segment, two annulations (one near the middle and the other subapical) on the femora, the bases and apices of the tibiae, and the apices of the tarsal joints deep brown to black.

The head slightly longer than broad, more or less globular; antennae with the first joint as long as or slightly shorter than the third, the second considerably longer than the others, and the fourth slightly shorter than the first; rostrum touching the prosternum, not reaching the anterior coxae, with the first joint about twice as long as the second and third subequal ones together; the globular pronotum slightly shorter than the head, about as broad as the head is long, with the anterior angles tubercularly prominent, and with a prominent tubercle medially posteriorly; mesonotum basally depressed, longitudinally subcarinate, with the posterior lateral angles tubercularly prominent; metanotum much broader than long, with a medial subcarinate ridge; abdomen above with the sutures feebly crenulated, and with a small pore basally on each side of the first segment in both sexes; femora armed with bristles on the under surfaces; anterior tibiae slightly compressed, dilated apically, their spongy fossae being larger than the intermediate ones; apical margin of the last abdominal segment above truncated in ♀, rounded in the ♂; antennae, rostrum, medial ventral surface of the abdomen, the coxae, and the legs pilose; eggs dark reddish brown, resembling seeds.

Length of ♂ 11–12 mm., ♀ 13½–14 mm.

Breadth of ♂ 4–4¼ mm., ♀ 5–5½ mm.

Egg about 1 mm. in diameter.

Hab.—Ovamboland—Otjimbumbe, Kunene R. (M. Exp.), Ongandjera (M. Exp.).

ARANEASTER n. gen.

Apterous; body subelongate, with hard integument, granular, with small tubercles (carrying minute bristles); head with the anteocular part slightly longer than the postocular dilated part, with a transverse impression behind the eyes, with the surface tubercularly granular, with a small spine in front of each antenniferous tubercle, and two small upright spines medially between the antenniferous tubercles; eyes lateral; ocelli absent; antennae with the first joint incrassate and extending beyond the apex of the head, with the second the longest; rostrum short, stout, three-jointed, with the first joint longer than the others, not reaching the base of the head; thorax distinctly divided into pro-, meso- and metanota, the posterior lateral angles of each acutely prominent; scutellum and hemelytra absent; abdomen with seven distinct segments (excluding genital segment), with the apical angles of the segments angularly produced; prosternum broadly sulcated; metasternum globularly elevated, slightly depressed posteriorly; mesostethium with a pore near the posterior margin; coxae powerful, the anterior ones being armed near their bases with a well-developed downwardly directed nodular structure, and the posterior ones fairly wide apart; femora slightly incrassate, with the posterior ones slightly more so, with the intermediate and posterior ones armed beneath apically with dentate spines; anterior and intermediate tibiae feebly dilated apically, without spongy fossae; posterior tibiae armed beneath with two rows of slender bristles; tarsi two-jointed, with the apical joint considerably longer than the basal one; posterior legs longer than anterior ones; genital segment (♀) (Pl. VI, fig. 1*a* *) subterminal, in the form of a short downwardly directed tubular structure with a circular aperture.

* In Pl. VI, fig. 1*a* is upside down, the top being ventral and the bottom dorsal.

This genus seems to be an isolated one, and differs from other members of the *Salyavatinae* by the presence of two joints to all the tarsi. As only a single female specimen is at hand, and the general characters agree with those of the *Salyavatinae*, I assign it to this subfamily. This insect was also found under stones in company with *T. saxatilis*, to which it bears a strong resemblance.

Type.—*A. granulosus* n. sp.

A. granulosus n. sp. S.A.M.

(Pl. VI, figs. 1, 1*a*, and 1*b*.)

The body granular, with a shagreen appearance, deep dark or earthy brown above; the first antennal joints, the disc of the pronotum, the lateral intramarginal parts of the meso- and metanota, some obscure large spots on each side on the abdomen above, the bases of the apical angles on the segments on the connexivum and the legs, especially the anterior ones, with an orange tinge; the second, third, and fourth antennal joints, the eyes, the rostrum, a large lateral spot on each side and the posterior part of the pronotum, two medial abbreviated fasciae, a lateral fascia on each side anastomosing posteriorly and a spot on each side near the posterior angles on the mesonotum, the medial part and a spot on each side near the posterior angles on the metanotum, an obscure medial spot at the base of the second abdominal segment above, some medial infusions on the posterior half of the abdomen above, three longitudinal rows of eye-like spots (surrounded by a pale margin), two series on the segmental sutures, and one series on the segments on each side of the abdomen above, a spot on the margin near the apical angle of each segment on the connexivum, a spot on the prostethium, the meso- and metastethia in part, two rows of eye-like spots on each side, and a medial row of larger spots on the abdomen below, the prosternum, an antero-lateral spot and a lateral spot on the coxae, a spot on the superior basal parts and a broad annulation beyond the middle on the femora, the subbasal annulation and the apices of the tibiae and the tarsi dark brown to black; the medial part and the posterior lateral angles on the pronotum, two basal fasciae, the basal parts of the lateral margins and the posterior angles on the mesonotum and metanotum, the apical angles of the segments on the connexivum, a callous spot medially near the apical margin of the second abdominal segment above, the prostethium in part, the acetabula, the anterior part of the prosternum, the meso- and metasterna, the medial ventral part of the abdomen below, the genital pore, the coxae, trochanters, femora, and tibiae pale yellowish white.

The head slightly longer than broad, with the interocular space slightly raised into four tubercular elevations; antennae with the first joint the shortest, slightly shorter than the fourth, with the second slightly longer than the third; rostrum touching the prosternum, not reaching the anterior coxae, with the first joint longer than the two apical ones together, and the second slightly longer than the third; pronotum about as long as the head, slightly broader than long, with the medial part slightly convex and raised into two tubercular elevations near the middle and one posteriorly and medially, with the anterior lateral angles tubercularly prominent, and the lateral margins straight; posterior lateral angles of the meso- and metanota angularly produced; abdomen with a small pore basally on each side on the first dorsal segment, with the lateral parts reflected upwards and slightly over the dorsal surfaces, with the apical angles of the segments acutely angular; prosternum with the anterior angles prominent; anterior coxae armed with a downwardly directed nodular structure (Pl. VI, fig. 1*b*); femora and tibiae tubercular; tibiae pilose apically; anterior tibiae feebly dilated apically, with no spongy fossae.

Length of ♀ about 11 mm.
Breadth of ♀ acr. pron. about 2 mm.
Breadth of ♀ acr. abd. 4 mm.
Hab.—Ovamboland—Otjimbumbe, Kunene R. (M. Exp.).

Sub-fam. 5. **Acanthaspidinae** Stal.

TRIBE REDUVIINI Jeannel.

Gen. GNISTUS Stål.

1874. Stål, Enum. Hem., iv, pp. 65 and 71.
Neovarus Distant, Ann. S. Afr. Mus., x, p. 46, 1911.
Type.—*G. fuscoirroratus* Stål.

G. luteipennis Dist. S.A.M.

1911. Distant, Ann. S. Afr. Mus., x, p. 46 (*Neovarus*).
Hab.—S.-W. Africa—(Locality ?) (Dr. Knobel).

Gen. REDUVIUS Lam.

1801. Lamarck, Syst., p. 294.
1802. Latreille, Hist. Nat., iii, p. 249.

1835. Burmeister, Handb., ii, p. 234.
1840. Spinola, Essai Hem., p. 120.
1843. Amyot et Serville, Hem., p. 337.
1892. Reuter, Act. Soc. Sc. Fenn., xix, No. 15, p. 3.

Opsicoetus Klug, Symb. Phys., ii, fol. e, 1830.
,, Stål, Enum. Hem., iv, p. 66, 1874.
Holotrichius (part) Herr. Schaeffer, Wanz. Ins., viii, p. 38, 1848.
Opinus (part) Stål, Oefv. Vet. Ak. Förh., p. 40, 1855.
Varus (part) Stål, Hem. Afr., iii, p. 141, 1865.
Oplistopus Jakowleff, Troudy. Ent. Ross., viii, p. 79, 1875.

Type.—*R. personatus* Linn.

R. bitumineus n. sp. S.A.M.

(Pl. IV, fig. 7.)

Body, antennae and legs pilose; the head, prothorax and prosternum shining; the scutellum, hemelytra and body beneath oleaceous; the head, eyes, antennae, prothorax, scutellum, the coria, the veins of the membrane, two fasciae (one along the exterior vein of the exterior membranal cell, the other parallel to it and more exteriorly), and a subapical blotch towards the exterior margin of the membrane, the lateral pectoral regions and a broad fascia on each side of the abdomen piceous; the antenniferous tubercles, a spot on the fovea near each lateral posterior angle on the posterior margin of the pronotum, an obscure basal spot on the clavus and the corium, a subapical fascia on the corium, the rostrum, the sternum, the coxae, the superior surfaces of the legs, the connexivum, and the apex of the abdomen brownish ochraceous; the under surfaces of the legs, the short medial ventral abdominal carina extending to about the apex of the second abdominal segment, the disc of the abdomen and the basal half of the dorsal surface a little lighter (the apical part of the clavus, the contiguous part of the corium, the areola, an area in the middle cell of the corium are clear but show the yellowish dorsal surface of the abdomen); the membrane infuscated (the basal spot at the apex of the corium and a fascia between the two dark fasciae not infuscated); alae opalescent hyaline; the abdomen ochraceous dorsally on its basal half, castaneous towards the apex.

The head with the anterior elongated part projecting forward, narrower than basal part, with the medial part grooved to the slight tubercular elevation between the antenniferous tubercles; eyes large;

ocelli on a convex basal part ; antennae with the first joint incrassate and just reaching the apex, the second less incrassate and more than twice as long as the first, with the third and fourth slender and about equally long ; rostrum with the second joint only slightly longer than the first ; pronotum constricted before the middle, deeply sulcated on the anterior part, the sulcation being continuous with a broad median depression on the posterior part (bounded by ridges), with the lateral margins pilose, the posterior lateral angles tubercularly rounded, with the surface of the posterior lobe rugulose and the posterior margin convex to the scutellum ; scutellum triangular, with its apex raised into a blunt spine, with the central triangularly raised area transversely rugulose, with its margins carinate and pilose ; corium with the veins prominent and pilose along costal margin ; prosternum deeply sulcate ; metasternum and basal part of abdomen below medially carinate ; abdomen below finely rugulose and pilose ; legs extremely pilose ; anterior femora slightly incrassate ; anterior and intermediate tibiae with spongy fossae.

♂ with the abdominal carina extending to the apex of the fifth ventral segment and with the apex rounded ; ♀ with the apex pointed.

This species is allied to *labeculatus* Dist.

Length, 13–15 mm.

Breadth, 3–4 mm.

Hab.—Great Namaqualand—Kalkfontein (J. S. Brown).
Damaraland—Nuragas (M. Exp.), Ojtiwarongo (J. S. Brown).

R. fusciceps Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 218.
1865. Stål, Hem. Afr., iii, p. 140 (*Opsicoetus*).
1892. Reuter in Act. Soc. Sc. Fenn., xix, No. 15, p. 20.

Hab.—Damaraland—Swakop R. (after Stål).

R. nigricephalus n. sp.

(Pl. V, fig. 1.)

Body elongate, pilose ; the head with the downwardly directed apical part dark brown ; the disc and very large eyes black ; the posterior cervical region brownish yellow ; the ocelli yellow or castaneous ; the pronotum and pectoral regions shining ; the pronotum, the scutellum, the basal part and costal regions of the coria, the pectoral regions, the abdomen and legs golden to reddish yellow ; the antennae (often with the first joints blackish brown), the rostrum, the central triangular disc and lateral margins of the scutellum, and the metastethium brownish yellow; the apex of the third and the base of the fourth antennal joints, the articulations of the femora and tibiae, the apices of the tibiae and tarsi, and the claws deeper, reddish yellow; the connexivum and the basal half of the abdomen above ochraceous; the apical half of the abdomen and (sometimes) irregular patches on the lateral regions of the abdomen beneath (especially towards the apex) piceous; the membrane infuscated, with a purplish tinge, with the basal margins near the apex of the corium whitish (much of the dark colour is due to the dark colour of the apical half of the abdomen shining through); alae opalescent hyaline; posterior part of pronotum, scutellum and coria feebly punctate.

The head with a medial transverse impression, with the posterior part globular and elevated and about as large as one of the eyes, darkly pilose between the eyes and ocelli; eyes nearly contiguous on the under surface; antenniferous tubercles prominent; antennae slender, pilose, with the first joint incrassate and just reaching the cephalic apex, the second thinner, twice or more than twice as long as the first, with the third shorter and the fourth a little longer than the first; rostrum thick, with the second joint longer than the first; pronotum constricted before the middle, with a longitudinal sulcation extending to near the base, with the anterior part in the form of two convex and globular areas, with the anterior margin slightly sinuate, the anterior angles rounded, the lateral margins sinuate, with the posterior margin of the posterior lobe convex to the scutellum, and the posterior lateral angles not prominent, rounded; scutellum triangular, with its central triangular part slightly raised and ridged laterally, with its sides pilose; coria with the costal margins slightly sinuate, with the veins and the costal region pilose, with their apices extending to near the apex of the abdomen; membrane extending beyond the abdomen; abdomen with a medial carina below; two anterior pairs of femora slightly incrassate; posterior tibiae longer than the femora; anterior tibiae slightly dilated apically, with short oval spongy fossae; tarsi three-jointed, the apical joint the longest.

Length, 9·5–11 mm., average 10 mm.

Breadth, 2·5–3 mm.

Hab.—Great Namaqualand—Kalkfontein (J.Brown), Asab, Gibeon (J. Brown).
Damaraland—Usakos (M. Exp.).
Bushmanland and Cape Province—Prince Albert.

R. obscuricollis Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 318 (*Holotrichius*).
1865. Stål, Hem. Afr., iii, p. 140 (*Opsicoetus*).
1892. Reuter in Act. Soc. Sc. Fenn., xix, No. 15, p. 19.

Hab.—Damaraland—Swakop R. (after Stål).

R. rasipodus n. sp. S.A.M.

(Pl. V, fig. 2.)

Body, antennae, and legs pilose; the head, the rostrum, the first joints of the antennae, the pronotum, the basal part of the scutellum, the basal part of the suture between the clavus and the corium, two spots near the middle and inner apical part of the corium, and the lateral pectoral regions brown to testaceous; the second, third, and fourth joints of the antennae, the extreme posterior margin of the pronotum, including the posterior lateral angles, the apical part and spine of the scutellum, the basal part of the clavus, the narrow costal margins of the coria, the superior surfaces of the legs, the articulations between the trochanters and femora and femora and tibiae, the apices of the tibiae, the apices and the claws of the tarsi, the sternum and the coxae of all the legs lighter, reddish or brownish yellow; the corium, membrane and the acetabula below brownish or yellowish white; the abdomen and the connexivum ochraceous; the large eyes, the interocular space, the ocelli, and an obscure lateral abdominal fascia (especially towards the apex) piceous; the apex of the abdomen brownish yellow.

The head elongated, with the anteocular part prominent and nearly as thick as the postocular part, with a prominent raised sulcated tubercle between and projecting beyond the antenniferous tubercles, transversely sulcated behind the eyes; antennae with the first incrassate joint reaching the apex of the head, with the second about twice as long as the first, and the rest tapering, slender, about as long as the first and second together; rostrum with the second joint about twice as long as the first; pronotum longer than the head, constricted before the middle, with a medial anterior sulcation extending beyond the transverse constriction into a broad depression; anterior pronotal lobe prominent, in the form of two convex areas, with the anterior margin slightly sinuate and the anterior lateral angles tubercularly prominent; posterior lobe rugulose, pilose laterally, with the posterior angles rounded; scutellum slightly raised, with its central triangular rugulose area ridged laterally, carinate apically, with the apex in the form of an upwardly directed spine; hemelytra with the costal margins slightly sinuate, with the clavus, the contiguous corial cell, and the cell external to this clear or membranous, with the costal veins pilose; corium with the apex not reaching the apex of the abdomen; membrane large, extending beyond the abdomen; prosternum sulcated; meso- and metastethia transversely rugulose; metasternum medially carinate; abdomen with a medial carina, with the under surface and apex pilose; legs pilose; anterior femora slightly incrassate, with a row of dense short spines beneath; intermediate femora finely spinose beneath; two pairs of anterior tibiae with spongy fossae, densely spinose below; anterior spongy fossa about $\frac{1}{3}$ the length of the tibia; tarsi with the apical joint the longest.

Length of ♂ about 17 mm.
Breadth of ♂ acr. pron. 3·5 mm.
Breadth of ♂ acr. abd. 4 mm.
Hab.—S.-W. Africa (coll. Dr. Knobel).

R. tarsatus Germ. S.A.M.

1837. Germar in Silberm. Rev., v, p. 131.
1892. Reuter in Act. Soc. Sc. Fenn., xix, No. 15, p. 10.

Hab.—Damaraland—Gobabis (Dr. Knobel), Otjiwarongo (M. Exp.), Okahandja (Dinter), Otjosondu (Casper), Tsumeb (M. Exp. and Köchig), Waterberg (Kolbitz), Windhuk (M. Exp., Techow), Windhuk-Okahandja (Faupel).

Gen. HOLOTRICHIUS Burm.

1835. Burmeister, Handb., ii, p. 247.
1861. Fieber, Europ. Hem., pp. 42 and 156.
1865. Stål, Hem. Afr., iii, p. 123.
1874. Stål, Enum., iv, pp. 66 and 77.
1892. Reuter, Monogr. in Act. Soc. Sc. Fenn., xix, No. 15, p. 3.

Oreada Mulsant et Mayet, Ann. Soc. Linn. Lyon., p. 292, 1868.
,, Mulsant et Rey, Pun. de Fr. Reduv., p. 49, 1893.
? *Lochus*, Douglas and Scott, Ent. Month. Mag., v, p. 138.

Type.—*H. tenebrosus* Burm.

H. farinator Reut.

1892. Reuter, Monogr. Act. Soc. Sc. Fenn., xix, No. 15, p. 17, pl. i, fig. 10.

Hab.—" Damaraland."

Gen. Edocla Stål.

1859. Stål, Oefv. Vet. Ak. Förh., xvi, p. 189.
1874. Stål, Enum., iv, pp. 65 and 76.

Type.—*E. bisbisignata* Stål.

E. bisbisignata Stål. S.A.M.

1859. Stål, Oefv. Vet. Ak. Förh., xvi, p. 189.
1865. Stål, Hem. Afr., iii, p. 129 (*Acanthaspis*).

Hab.—Namaqualand—Kalkfontein (J. S. Brown).
Damaraland—Narebis (M. Exp.).
Ovamboland—Kambele Falls, Kunene R. (M. Exp.).

E. schultzei Schum.

1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 79.

Hab.—Namaqualand—Kubub-Aar (Schultze).
Damaraland—Windhuk (Schultze).

E. limbata Horv. S.A.M.

1914. Horvath, Ann. Mus. Nat. Hung., xii, p. 111.

Hab.—Damaraland—Otjiwarongo (J. Brown), Windhuk (after Horvath).

E. vittipennis Stål. S.A.M.

1859. Stål, Oefv. Vet. Ak. Förh., p. 189 (*Acanthaspis*).

Hab.—Namaqualand—Kalkfontein (J. Brown).
Damaraland—Gamis, Otjikoto-Dinab (M. Exp.), Otjiwarongo (J. Brown).
Ovamboland—Kambele Falls, Kunene R. (M. Exp.).

E. quadrimaculata Reut.

1881. Reuter, ad Cognit. Reduv. mund. antiqui, p. 62 in Act. Soc. Sc. Fenn., xii.

Hab.—Namaqualand ?—(" Namaquas," after Reuter).

Gen. TRICHEDOCLA Jeannel.

1914. Jeannel, Bull. Soc. Ent. Fr., p. 176.

Type.—*T. pilosula* Dist.

T. quadrisignata Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 39.
1865. Stål, Hem. Afr., iii, p. 130 (*Acanthaspis*).
1892. *Acanthaspis reuteri* Horvath, Termész. Füzet., xv, p. 265.
1896. *Edocla quadrisignata* Lethierry and Severin, Cat. Hem. Heter., iii, p. 102.
1909. *Acanthaspis reuterianus* Kirkaldy, Canad. Ent., xli, p. 388.
1909. ,, ,, Schouteden, Ann. Soc. Ent. Belg., liii, p. 422.

Hab.—Damaraland—Otjituo (M. Exp.), Otjiwarongo (J. Brown).
Ovamboland—Namakunde (M. Exp.).

Gen. ACANTHASPIS Am. et Serv.

1843. Amyot et Serville, Hem., p. 336.
1865. Stål, Hem. Afr., iii, pp. 122 and 126.
1874. Stål, Enum., iv, p. 65.

Platymeris (part) Burmeister, Handb., ii, p. 233, 1835.
Tetroxia Amyot et Serville, Hem., p. 334, 1843.
Mardania Stål, Oefv. Vet. Ak. Förh., p. 189, 1859.
Sub-gen. *Plynus* Stål, Enum., iv, p. 71, 1874.

Type.—*A. flavoraria* Hahn.

A. (*Tetroxia*) *obscura* Stål.

1855. Stål, Oefv. Vet. Ak. Förh., p. 39.
1865. Stål, Hem. Afr., iii, p. 130.

Hab.—Damaraland—Okahandja (Casper).

Gen. PHONERGATES Stål.

1853. Stål, Oefv. Vet. Ak. Förh., p. 261.
1865. Stål, Hem. Afr., iii, pp. 122 and 137.
1874. Stål, Enum., iv, pp. 65 and 70.

Sub-gen. *Clopophora* Stål, Oefv. Vet. Ak. Förh., p. 261, 1853.
,, ,, Stål, Enum., iv, p. 70, 1874.

Type.—*P. bicoloripes* Stål.

P. (*Clopophora*) *basilicus* Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 40 (*Clopophora*).
1865. Stål, Hem. Afr., iii, p. 137.

Hab.—Namaqualand—Kalkfontein (J. Brown).

P. concoloripes Reut.

1881. Reuter, Act. Soc. Sc. Fenn., xii, p. 54.

Hab.—Damaraland (Reut.).

Gen. PLATYMERIS L. de Castelnau.

1832. L. de Castelnau, Essai, p. 80.
1835. Burmeister (*pro parte*), Handb., ii, pp. 221 and 223.
1865. Stål, Hem. Afr., iii, pp. 121 and 123.
1874. Stål, Enum., iv, pp. 65 and 70.

Platymerus Amyot et Serville, Hem., p. 333, 1843.
Psyttala Stål, Oefv. Vet. Ak. Förh., p. 187, 1859.
Sub-gen. *Psyttala* Stål, Enum., iv, p. 70, 1874.

Type.—*P. biguttata* Linn.

P. guttatipennis Stål.

1859. Stål, Oefv. Vet. Ak. Förh., p. 188.
1865. Stål, Hem. Afr., iii, p. 125.

Hab.—Damaraland—Windhuk - Waterberg (Kolbitz), Salem (Schultze).

P. rhadamanthus Gerst. S.A.M.

1873. Gerstaecker, Decken's Reisen, iii, 2, p. 419, pl. xvii, fig. 8.
1878. Distant, syn. *P. confusa*, Ent. Month. Mag., xv, p. 100.

Hab.—Damaraland—Otavi (M. Exp.).

Sub-fam. 6. **Piratinae** Stal.

Gen. ECTOMOCORIS Mayr.

1865. Mayr, Verh. Zool. Bot. Ges. Wien., xv, p. 438.
1866. Stål, Oefv. Vet. Ak. Förh., p. 251.
1872. Stål, *ibid.*, p. 46.

Eumerus Klug, Symb., ii, 1830.
,, Stål, Enum., iv, pp. 56 and 61, 1874.

Peirates Serville, Ann. Sc. Nat., xxiii, p. 215, 1831.
Pirates Burmeister (*pro parte*), Handb., ii, p. 239, 1835.
,, Stål, Hem. Afr., iii, p. 116, 1865.
Rasahus Amyot et Serville, Hem., p. 325, 1843.
Macrosandalus Stål, Oefv. Vet. Ak. Förh., p. 251, 1866
Sphodrocoris Stål, *ibid.*
Sub-gen. *Callisphodrus* Stål, *ibid.*
,, ,, Stål, Enum., iv, p. 62, 1874.

Type.—*E. quadriguttatus* Fabr.

E. (*Eumerus*) *dichrous* Stål.

1865. Stål, Hem. Afr., iii, p. 116 (*Pirates*).

Hab.—S.-W. Africa (Lübbert).

E. (*Eumerus*) *flavipennis* Reut.

1881. Reuter, ad. Cognit. Reduv., etc., in Act. Soc. Sc. Fenn., xii, p. 47.

Hab.—Damaraland—Windhuk (Techow).

E. quadrimaculatus Serv. S.A.M.

1831. Serville, Ann. Sc. Nat., xiii, p. 217 (*Peirates*).
1843. Amyot et Serville, Hem., p. 324.
1865. Stål, Hem. Afr., iii, p. 118 (*Pirates*).

triguttatus Erichson, Prei v., p. 11, 1842; Stett. Ent. Zeit., xx, p. 85, 1859 (*Peirates*).
trifenestratus Stål, Oefv. Vet. Ak. Förh., p. 38, 1855 (*Pirates*).
Hab.—Ovamboland—Mafa (M. Exp.).

E. quadrimaculatus var. *macroquadrimaculatus* nov. S.A.M.

Large, black and blackly pilose; two large oblong spots on the hemelytra (one medially and obliquely on the corium and bordering on the clavus, the other subtransversely at the base of the membrane) ochraceous; the apical two-thirds of the clavus, a narrow area surrounding the costal and basal sides of the anterior ochraceous spot, the intervening space between the two ochraceous spots, a narrow fascia traversing the posterior spot and the basal part of the membrane beyond velvety black; the apex of the membrane lighter; a medial line on the rostrum, the apex of the rostrum, the tarsi, especially the hairs and the claws, testaceous; the spongy fossae on the anterior and intermediate tibiae dilute orange.

Length of ♂ to apex of membrane 19–20 mm.

Breadth of ♂ about 5–5·5 mm.

This variety differs essentially from *E. quadrimaculatus* Serv. by its larger size, the larger spots on the hemelytra, the yellow colour of the spots and the black narrow fascia traversing the posterior spot.

Hab.—Damaraland—Gobabis (Dr. Knobel); also
Smithfield, O.F.S. (coll. Kannemeyer).

Gen. PIRATES Serv.

1831. Serville, Ann. Sc. Nat., xxii, p. 215.
1832. L. de Castelnau, Essai, pp. 6, 9, and 78.
1835. Burmeister (part), Handb., ii, pp. 222 and 239.
1843. Amyot et Serville, Hem., p. 324.
1866. Stål, Oefv. Vet. Ak. Förh., p. 250.
1874. Stål, Enum., iv, p. 56.

Sub-gen. *Fusius* Stål, Stett. Ent. Zeit., xxiii, p. 458, 1862.
Sub-gen. *Microsandalus, Brachysandalus, Cleptocoris* Stål, Oefv. Vet. Ak. Förh., pp. 250 and 251, 1866.
Sub-gen. *Spilodermus* Stål, Hem. Fabr., i, p. 122, 1868.
Lestomerus Amyot et Serville, Hem., p. 322, 1843.

Type.—*P. hybridus* Scop.

P. (*Cleptocoris*) *lugubris* Stål.

1855. Stål, Oefv. Vet. Ak. Förh., p. 318.
1865. Stål, Hem. Afr., iii, p. 118.
1881. Reuter in Act. Soc. Sc. Fenn., xii, p. 43.
1910. Schouteden, Sjöstedt's Kilim.-Meru. Exp., xii, p. 147.

Hab.—Damaraland—Grootfontein-Namutoni (Seewald).

Sub-fam. 7. **Ectrichodiinae** Stal.

Gen. ECTRICHODIA Lepel. et Serv.

1825. Lepelletier et Serville (*pro parte*), Encycl., x, p. 279.
1865. Stål, Hem. Afr., iii, p. 105.

Physorrhynchus Amyot et Serville, Hist. Nat. Ins. Hem., p. 342, 1843.
Loricerus Hahn, Wanz. Ins., i, pl. v, fig. 20, 1831.

Type.—*E. crux* Thb.

E. crux Thb. S.A.M.

1783. Thunberg, Nov. Ins. sp., ii, p. 35.
1788. Gmelin, Syst. Nat., I, iv, p. 2145 (*Cimex*).
1822. Thunberg, Hem. Rostr., cap. iii, p. 5 (*Reduvius*).
1831. Hahn, Wanz. Ins., i, p. 30, fig. 20 (*Loricerus*).
1835. Burmeister, Handb., ii, p. 238 (*Ectrichotes*).
1840. Blanchard, Hist. Ins., iii, p. 105.
1865. Stål, Hem. Afr., iii, p. 106.

cruciatus Lepelletier et Serville, Encycl., x, p. 279, 1825 (*Reduvius*).
Hab.—Damaraland—Gobabis (Dr. Knobel), N.-E. Damaraland (Eriksson).
Ovamboland (Eriksson).
Deutsch-Südwestafrika (after Lübbert).

Gen. GLYMMATOPHORA Stål.

1853. Stål, Oefv. Vet. Ak. Förh., x, p. 261.
1874. Stål, Enum., iv, p. 50.
1914. Horvath, Ann. Mus. Hung., xii, p. 127.

Type.—*G. submetallica* Stål.

G. erythrodera Schaum. S.A.M.

1853. Schaum, Ber. Ak. Berl., p. 358.
1862. Schaum, Peters' Reis. Moss. Ins., p. 46.

signoreti Bolivar, Ann. Sos., esp. Hist. Nat., viii, p. 143, 1879.
nigripes Reuter, Act. Soc. Sc. Fenn., xii, p. 34, 1881.
Hab.—Damaraland—Otjituo (M. Exp.), Tsumeb (Köchig).

G. eques Bredd. S.A.M.

1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 75.

Hab.—Deutsch-Südwestafrika (after Lübbert).
Damaraland—Grootfontein (M. Exp.), Otjosonda (Casper), Tsumeb (Köchig).
Ovamboland (Eriksson).

G. natalensis Stål.

1855. Stål, Oefv. Vet. Ak. Förh., p. 40 (*Physorrhynchus*).
1865. Stål, Hem. Afr., iii, p. 107 (*Ectrichodia*).
1874. Stål, Enum., iv, p. 50.

G. natalensis n. var. *femoralis* Schum.

1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 75.

Hab.—Deutsch-Südwestafrika (after Lindt).

G. schoutedeni Horv. S.A.M.

1914. Horvath, Ann. Mus. Nat. Hung., xii, p. 129.

splendens Schouteden, Ann. Soc. Ent. Belg., l, p. 24, 1906 (nec Distant).

Hab.—Damaraland—Windhuk (Miss Wilman).

G. submetallica Stål.

1855. Stål, Oefv. Vet. Ak. Förh., p. 39.

Hab.—Deutsch-Südwestafrika (after Lübbert).
Damaraland—Okahandja (Peters), Outjo (Langheld), Windhuk (Techow).

G. venustiterga n. sp. S.A.M.

(Pl. V, fig. 3.)

Apterous ♀; the head, the antennae, the posterior lateral margins of the pronotum, the rostrum, the prostethium, the meso- and metastethia, the prosternum, the meso- and metasterna, the acetabula and the coxae testaceous; the bases of the first antennal joints, the pronotum, the femora and the tibiae red; the trochanters, the bases of the femora and the tarsi pale yellowish red; the eyes, the scutellum and metanotum black; the abdomen above with a bluish-green metallic lustre; the abdomen beneath dark testaceous with a bluish lustre.

The head about as long as the pronotum, more or less globular at the ocular region, smooth and shining, with the interocular space broad and posterior part below the eyes slightly convexly rounded; ocelli absent; antennae pilose, with the first joint slightly incrassate, shorter than the head, extending beyond the apex, second joint about $\frac{1}{3}$ longer than the first, the third about $\frac{1}{3}$ shorter than the first, and the fourth a little more than half as long as the third; rostrum with the first and second joints subequal, with the second dilated and the third short; pronotum trapezoidal, shining, constricted beyond the middle; the anterior part slightly narrower than the posterior part, convex, with slightly convex carinate lateral margins, with the anterior margin feebly sinuate, with a faint medial sulcation, abbreviated anteriorly, prominent posteriorly, ending in a darkly coloured depression on the transverse constriction; posterior lobe slightly convex to scutellum, slightly foveate on each side, transversely rugulose laterally near the posterior angles; scutellum small, with a central depression, with two lateral papillae (representing the mucrones); abdomen with the two first dorsal sutures crenulate, the third, fourth, fifth, and sixth slightly crenulate, with intramarginal crenulated sutures, shining below, the sutures crenulate and the lateral regions rugulose; connexivum with the upwardly reflected surfaces vermicelliformly rugulose; prosternum sulcated; metastethium obliquely and mesosternum transversely rugulose; anterior coxae without tubercles posteriorly; anterior femora incrassate; anterior and intermediate tibiae with spongy fossae.

Length about 12 mm.
Breadth acr. pron. 2 mm.
Breadth acr. abd. 4 mm.
Hab.—N.-E. Damaraland (Eriksson).

Gen. CLEPTRIA Stål.

1853. Stål, Oefv. Vet. Ak. Förh., p. 261.
1859. Stål. *ibid.*, pp. 176 and 182.
1865. Stål, Hem. Afr., iii, pp. 101 and 109.
1874. Stål, Enum., iv, pp. 46 and 53.

Type.—*C. limbata* Thb.

C. erotica Bredd.

1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 77.

Hab.—Damaraland—Windhuk (Techow).
Deutsch-Südwestafrika (after Mïnner).

C. oculata Stål. S.A.M.

1865. Stål, Hem. Afr., iii, p. 109.
1881. Reuter, Act. Soc. Sc. Fenn., xii, p. 37.

Hab.—Namaqualand—Kalkfontein (J. Brown).
Damaraland—Gobabis (Dr. Knobel), Sandfontein (Miss Wilman).

Sub-fam. 8. **Harpactorinae** Am. et Serv.

Div. 1. RHAPHIDOSOMARIA (after Distant).

Tribe 1. RHAPHIDOSOMINI Jeannel.

Gen. Rhaphidosoma Am. et Serv.

1843. Amyot et Serville, Hem., p. 392.
1865. Stål, Hem. Afr., iii, pp. 54 and 97.
1874. Stål, Enum., iv, pp. 14 and 42.
Limnobates Germar, Silberm. Rev., v, p. 122, 1837 (nec Burmeister).

Type.—*R. major.* Germ. (R. Burmeister, Am. et Serv.).

R. ambulator Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 45.
1865. Stål, Hem. Afr., iii, p. 98.
carinatum Stål, *ibid.*, p. 45 (♀).
Hab.—Damaraland—Sandfontein (S. Gillman), Otjituo (M. Exp.).
Ovamboland—Otjimbumbe, Kunene R. (M. Exp.).

R. circumvagans Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 45.
1865. Stål, Hem. Afr., iii, p. 98.
Hab.—Damaraland—Nuragas, Otjituo, Tsumeb (M. Exp.).
Ovamboland—Nomtele (M. Exp.).

R. linea Reut.

1881. Reuter, Act. Soc. Sc. Fenn., xii, p. 29.
Hab.—Ovamboland (after Reuter).

R. pallida Reut.

1881. Reuter, Act. Soc. Sc. Fenn., xii, p. 30.
Hab.—Damaraland (after Reuter).

Gen. Lopodytes Stål.

1853. Stål, Oefv. Vet. Ak. Förh., p. 263.
1865. Stål, Hem. Afr., iii, pp. 54 and 97.
1874. Stål, Enum., iv, pp. 14 and 42.

Type.—*L. grassator* Stål.

L. grassator Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 45.
1865. Stål, Hem. Afr., iii, p. 97.
Hab.—Damaraland—Otjituo (M. Exp.).
Ovamboland—Nomtele (M. Exp.).

L. spiniger Reut.

1881. Reuter, Act. Soc. Sc. Fenn., xii, p. 28.
Hab.—Ovamboland (after Reuter).

DIV. 2. HARPACTORARIA (after Distant); or

TRIBE 2. HARPACTORINI Jeannel.

Gen. HARPACTOR L. de Castelnau.

1832. L. de Castelnau, Essai Cl. Syst. Hem., p. 8.
1843. Amyot et Serville, Hem., p. 364.
1861. Fieber, Eur. Hem., pp. 42 and 152.
Reduvius Fabricius (part), Syst. Ent., p. 729, 1775.
,, Fabr., Syst. Rhyng., p. 266, 1803.
,, Stål, Hem. Afr., iii, p. 75, 1865.
Sub-gen. *Zostus*, *Hypertolmus*, *Diphymus*, *Chirillus*, *Lamphrius*, *Harpiscus* Stål, Enum., iv, pp. 37–39, 1874.
Sub-gen. *Oncanchenius* Stål, Oefv. Vet. Ak. Förh., No. 6, p. 46, 1872.
Sub-gen. *Rhinicoris* Kolenati, Bul. Soc. Imp. Nat. Mos., xxix, p. 460, 1856.
Sub-gen. *Rhynocoris* Hahn, Wanz. Ins., ii, p. 20, 1834.
Sub-gen. *Dinocleptes*, *Agrioclopius* Stål, Oefv. Vet. Ak. Förh., pp. 284 and 285, 1866.
Sub-gen. *Aprepolestes* Stål, Hem. Fabr., i, p. 111, 1868.
Sub-gen. *Coranidens* Reuter, Act. Soc. Sc. Fenn., xii, p. 296, 1881.

Type.—*H. iracundus* Poda.

H. otjimbumbensis n. sp. S.A.M.

(Pl. V, fig. 4.)

The head, the pronotum, the corium, the prostethium, the lateral parts of the pectoral region, the sternum, the medial part, the lateral margins and the apex of the abdomen and the legs pilose; the head, the eyes, the bases of the first antennal joints, the second, third, and fourth antennal joints, the apex of the rostrum, a narrow fascia behind each eye, the anterior lobe of the pronotum, two broad curved longitudinal fasciae on the posterior pronotal lobe, the scutellum, a transverse fascia or spots across the prostethium above the anterior coxae, the meso- and metastethia, the anterior parts of the meso- and metasterna, the superior surfaces of the two posterior coxae, a triangular spot on the marginal and basal part of each segment on the connexivum, a longitudinal fascia laterally on each side of the abdomen beneath, four or five oblong transverse fasciae on the ventral abdominal segments on each side of the medial line, a spot on each side of the genital segment (also the extreme apex in ♀), the apices of the femora, the bases and apices of the tibiae and the tarsi black; the first joints of the antennae, the second rostral joint, the ocelli, the medial area on the posterior pronotal lobe, the hemelytra, the femora and tibiae reddish brown or sienna brown; a medial spot between the ocelli, one on each side behind the eyes on the under surface, the anterior pronotal angles, an obscure narrow marginal fascia on each side of the anterior pronotal lobe, the broad medial fascia and the apex of the scutellum, the basal parts of the coria and the fasciae to the acetabula yellowish or eburneous; two curved fasciae on the anterior pronotal lobe, the lateral margins, the posterior lateral angles, and an obscure spot to the posterior margin of the posterior pronotal lobe, the under surface of the head, the first joint of the rostrum, the prostethium, the prosternum, the coxae, the trochanters, the basal under surfaces of the anterior femora and the apical segment of the ♂ yellow; the medial part of the mesosternum, the metasternum, the abdomen beneath and the connexivum dull ochraceous.

The head about as long as the pronotum, with the anteocular region shorter than the postocular, transversely impressed behind the eyes, with the interocular and postocular parts slightly raised, shining; antenniferous tubercles prominent; antennae with the first joint longer than the head, with the second and third equal, about half as long as the first, and the fourth very slightly longer than the first; rostrum long, with the first joint about as long as the anteocular part of the head, and the second longer than the first; pronotum with the transverse constriction antemedial, with the anterior lobe medially sulcated and slightly transversely grooved, with a distinct tubercle on each side, with the anterior margin sinuate and the anterior lateral angles tubercularly prominent, with the posterior lobe rugulose, distinctly foveate laterally near the prominent and rounded posterior lateral angles ; scutellum triangular, centrally foveate, with the apex spatulately dilated ; corium rugulose, pilose along its veins, the apical margin sinuate and the vein deliminating the membrane thick ; membrane rugulose, extending beyond the abdomen ; prosternum sulcated ; a Y-shaped carina ; on mesosternum and between the intermediate coxae ; abdomen slightly truncated ; anterior femora slightly incrassate ; anterior tibiae longer than femora and trochanters together ; anterior tarsi longer than posterior ones, with the basal joint the shortest.

Length of ♂ 12½ mm., ♀ 12·6 mm.

Breadth of ♂ acr. pron. 3 mm., ♀ 3·5 mm.

Breadth of ♂ acr. abd. 3·6 mm., ♀ 4 mm.

Hab.—Ovamboland—Onoolonga, Otjimbumbe, Kunene R. (M. Exp.).

H. pilipectus n. sp. S.A.M.

(Pl. V, fig. 5.)

The body and legs pilose ; the head above, the pronotum, the medial longitudinal slightly carinate region of the scutellum, the coria, the posterior basal part of the prostethium, the meso- and metastethia and the lateral parts of the abdomen beneath covered with a yellowish-white pubescence ; a medial posterior spot on the anterior pronotal lobe, the lateral margins of the posterior pronotal lobe, the anterior parts of the prostethium, an oblique fascia extending from the posterior lateral angles across the prostethium to its anterior region, some parts of the meso- and metastethia, the meso- and metasterna, and the coxae with a dense snow-white pubescence ; the first antennal joints, the bases of the second, the anterior lateral parts of the head, the upper surface and under surface and a posterior postocular fascia on the head, the first rostral joint, the lateral parts of the second joint, the apices of the anterior pronotal angles, the lateral carinate margins and the partially smooth tubercular elevations on the anterior pronotal lobe, the posterior lateral angles of the posterior pronotal lobe, the medial longitudinal carina and apex of the scutellum, the prostethium, the prosternal sulcation, the acetabula, the Y-shaped carina on the mesosternum, the posterior part of the metasternum, the abdomen beneath, the connexivum, the under surfaces of the femora, the tibiae and the tarsi yellowish white (the anterior pronotal tubercles and the obscure subbasal annulation to the tibiae lighter in colour) ; the bases and apices of the first antennal joints, the apices of the second, a fascia on the anterior lateral region, a fascia on each side of the head dorsally, the eyes, a broad lateral fascia on each side behind the eyes, a medial line on the rostrum, the apex of the rostrum, the medial pronotal sulcation, the apices of the two posterior tubercles on the anterior lobe, the intermarginal anterior and lateral margins of the anterior lobe, the scutellum, the clavus and the contiguous part of the corium, the membrane, a longitudinal fascia on the upper part of the prostethium, the anterior margins of the meso- and metastethia, two spots on each side of the prosternal sulcation, the mesosternum, an anterior narrow margin on the metasternum, an obscure lateral fascia on each side of the abdomen, the spots on the connexivum occupying the basal parts of the segments, the inferior surfaces of the coxae, the posterior surfaces of the trochanters and the femora, the bases and apices of the tibiae and the tarsi dark brown to black ; the posterior pronotal lobe, the coria, the meso- and metastethia yellowish brown.

The head slightly shorter than the pronotum, with the anteocular part shorter than the postocular part ; antennae with the first joint longer than the head and extending beyond the apex, with the second much shorter, with the third about one and a half times as long as the second and the fourth about as long as the second ; rostrum with the first joint about as long as the anteocular part and the second considerably longer ; pronotum constricted medially, with the anterior lobe medially sulcated and the surface raised into four tubercular elevations, the posterior pair being more prominent, with the anterior angles prominently tubercular and the lateral margins slightly carinate, with the posterior lobe slightly foveate near the rounded posterior lateral angles ; scutellum triangular, foveate basally and laterally, with the apex slightly directed upwards ; membrane extending beyond the abdomen ; connexivum reflected upwards ; anterior tibiae about as long as the femora ; posterior tibiae longer than the femora.

Length of ♂ 10–10·5 mm.
Breadth of ♂ acr. pron. 3 mm.
Breadth of ♂ acr. abd. about 3 mm.
Hab.—Ovamboland—Kunene R., Nomtele (M. Exp.) ; also
Cape Colony—Cape Town.

H. (*Harpiscus*) *rapax* Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 41 (*Harpactor*).
1865. Stål, Hem. Afr., iii, p. 87 (*Reduvius*).

1874. Stål, Enum., iv, p. 39 (*Harpiscus*).

segmentarius Signoret, Thomson, Arch. Ent., ii, p. 321, 1858.

Hab.—Ovamboland—Kunene R. (M. Exp.).

H. (*Diphymus*) *segmentarius* Germ. S.A.M.

1837. Germar, Silberm. Rev., v, p. 125.
1865. Stål, Hem. Afr., iii, p. 79 (*Reduvius*).
1874. Stål, Enum., iv, p. 38 (*Diphymus*).
1910. Schouteden, Sjöstedt's Kilim.-Meru. Exp., xii, p. 148 (*Rhinocoris*).

Hab.—Damaraland—N.-E. Damaraland (Eriksson), Waterberg (M. Exp.).
Ovamboland—Otjimbumbe, Kunene R. (M. Exp.).
Deutsch-Südwestafrika (after Lübbert).

H. (*Chirillus*) *violentus* Germ. S.A.M.

1837. Germar in Silberm. Rev., v, p. 126.
1865. Stål, Hem. Afr., iii, p. 82 (*Reduvius*).
1874. Stål, Enum., iv, p. 38.
1881. Reuter, Act. Soc. Sc. Fenn., xii, p. 24 (*Chirillus*).

disciventris Herr. Schaeffer, Wanz. Ins., viii, p. 86, fig. 856, 1848.
natalensis Stål, Oefv. Vet. Ak. Förh., p. 42, 1855.
Hab.—Ovamboland—Omaramba (Eriksson).

Gen. SPHEDANOLESTES Stål.

1866. Stål, Oefv. Vet. Ak. Förh., pp. 284 and 288.
1868. Stål, Hem. Fabr., i, p. 111.

Sphydrinus Stål, Enum., iv, pp. 13 and 35, 1874.
Harpactor (part) Puton, Cat., p. 39, 1886.
Sub-gen. *Sphactes, Lissonyctus, Aulacosphodrus* Stål, Oefv. Vet. Ak. Förh., pp. 687, 688, and 690, 1870.
Sub-gen. *Graptosphodrus* Stål, Oefv. Vet. Ak. Förh., p. 284, 1866.
Sub-gen. *Haemactus* Stål, Enum., iv, p. 34, 1874.

Type.—*S. impressicollis* Stål.

S. nanus Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 43 (*Harpactor*).
1865. Stål, Hem. Afr., iii, p. 90 (*Reduvius*).
1874. Stål, Enum., iv, p. 33.

Hab.—Ovamboland—Mafa, Otjimbumbe, Kunene R. (M. Exp.).

(DIV. 3. VELINARIA of Distant.)

Gen. COSMOLESTES Stål.

1866. Stål, Oefv. Vet. Ak. Förh., p. 285.
1872. Stål, *ibid.*, p. 45.
1868. Stål, Hem. Fabr., i, p. 111.
1874. Stål, Enum., iv, p. 22.

Type.—*C. pictus* Klug.

C. pictus Klug. S.A.M.

1830. Klug, Symb., ii, pl. xix, fig. 12.
1865. Stål, Hem. Afr., iii, p. 92 (*Reduvius*).
1874. Stål, Enum., iv, p. 32.
1912. Schouteden, Sjöstedt's Kilim.-Meru. Exp., xii, p. 150.

Hab.—Ovamboland—Mafa, Ondongua, Otjimbumbe, Kunene R. (M. Exp.).

Gen. PANTOLEISTES Stål.

1853. Stål, Oefv. Vet. Ak. Förh., p. 262.
1865. Stål, Hem. Afr., iii, pp. 52 and 73.
1874. Stål, Enum., iv, pp. 11 and 30.

Type.—*P. princeps* Stål.

P. princeps Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 41.
1865. Stål, Hem. Afr., iii, p. 73.
1881. Reuter, Act. Soc. Sc. Fenn., xii, p. 20.

Hab.—Damaraland—Waterberg (M. Exp.).
Ovamboland (by Eriksson).
Deutsch-Südwestafrika (after Lübbert).

(DIV. 4. CORANUSARIA of Distant.)

Gen. CORANUS Curtis.

1833. Curtis, Brit. Ent., x.
1865. Stål, Hem. Afr., iii, pp. 49 and 93.

1874. Stål, Enum., iv, p. 8.

Colliocoris Hahn, Wanz. Ins., ii, p. 23.
,, Fieber, Eur. Hem., pp. 42 and 154, 1861.

Type.—*C. subapterus* de Geer.

C. carbonarius Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 42 (*Harpactor*).
1865. Stål, Hem. Afr., iii, p. 94.
1874. Stål, Enum., iv, p. 19.

Hab.—Damaraland—Waterberg (M. Exp.).
Ovamboland—Omaramba (Eriksson).

C. mucidus Schum.

1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 74.

Hab.—Deutsch-Südwestafrika (after Lübbert).

C. parviceps Bredd.

1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 74.

Hab.—Damaraland—Swakop R. near Otjimbingwe (Schultze).

Gen. Vitumnus Stål.

1865. Stål, Hem. Afr., iii, pp. 53 and 68.
1874. Stål, Enum., iv, pp. 8 and 18.

Type.—*V. scenicus* Stål.

V. scenicus Stål. S.A.M.

1865. Stål, Hem. Afr., iii, p. 69.

V. scenicus var. *miniatus* Stål.

1855. Stål, Oefv. Vet. Ak. Förh., p. 41.
1865. Stål, Hem. Afr., iii, p. 70.

Hab.—Ovamboland—Omaramba (Eriksson).

Div. 5. POLIDIDUSARIA Dist.

* Igora n. gen.

Body narrow, elongated; head cylindrical, elongated, transversely depressed behind the eyes, with a prominent spine on each side behind

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* Kaffir for a "warrior."

the antennal insertions, with the apex and upper surface tubercularly granular (tubercles carrying short bristle-like spines), with the under surface armed with slender spines ; eyes comparatively small, lateral ; ocelli small, widely separated ; antennae inserted near apex of head, with the first joints long and slender, longer than the head and pronotum together, spinose, with the second joints long and slender ; rostrum with the first joint slightly incrassate, extending to about the middle of the eyes, with the second slightly longer ; pronotum constricted before the middle, armed with spine-carrying tubercles, with the posterior lateral angles prominently produced into tubercular spines, with the posterior interangular space bitubercular, with the posterior margin backwardly produced on each side of scutellum ; scutellum triangular, basally and laterally foveate, medially carinate, its apex horizontally produced into a spine ; hemelytra narrower than the abdomen, not reaching the apex (in ♀) ; prosternum sulcated, anteriorly prominent, margins armed with tubercular spines ; meso- and metasterna sparsely spinulose ; abdomen below medially feebly carinate and laterally longitudinally grooved, with the ventral and lateral surfaces sparsely spinulose, laterally grooved at the base of the connexivum, with the apices of the sixth segment (♀) ampliated ; connexivum reflected upwards ; anterior femora slightly incrassate, strongly spinose above and below ; intermediate and posterior femora slender, clavate apically, armed with tubercular spines on their upper surfaces ; anterior tibiae slightly shorter than the femora, spinulose, ampliated apically ; intermediate tibiae as long as the femora, spinulose ; posterior legs the longest ; tarsi three-jointed.

This genus is allied to *Polididus* and *Sclomina*, also showing affinities with *Nagusta.*

Type.—*I. repraesentatus* n. sp.

I. repraesentatus n. sp. S.A.M.

(Pl. V, figs. 6 and 6*a*.)

Body reddish brown or ferruginous ; the apex of the head, the apices of the first antennal joints, the part of the third (represented in the specimen), the ocelli, a medial, dorsal, postocular, narrow fascia, a medial longitudinal and two obscure lateral fasciae on the anterior pronotal lobe, four longitudinal fasciae and the margins of the posteriorly produced processes on the posterior lobe, the medial carina and the apex of the scutellum, the corium and its veins, two broad longitudinal fasciae on the abdomen above, the basal part of the prostethium, part of the meso- and metastethia, the acetabula, the spots on the connexivum occupying the basal parts of the segments, the lateral longitudinal ridge between the grooves on each side of the abdomen, some obscure spots on the lateral region of the abdomen, the medial carina, the apical margin of the sixth abdominal segment, the apex, the apical parts on the coxae, the upper, the narrow lateral and the under surfaces of the anterior femora, the under surfaces of the posterior femora, the tibiae and tarsi lighter reddish brown ; an anterior anteocular spot, a broad fascia behind each eye, the subapical annulation on the first antennal joints, the apices of the second joints, an obscure medial line and the apex on the rostrum, the anterior pronotal lobe, a medial fascia, the lateral margins and the posterior part (including the posterior lateral angles) of the posterior lobe, the lateral parts of the scutellum, the veins of the membrane, a lateral dorsal groove on each side at the base of the connexivum, the anterior margins of the meso- and metastethia, the lateral fasciae on the meso- and metasterna, the spots on the connexivum occupying the apices of the segments, the lateral basal parts of the abdomen, the lateral parts of the sixth abdominal segment beneath, the lateral abdominal grooves, the upper basal surfaces of the coxae, two lateral fasciae (the lower broad and the upper narrow) on each side of the anterior femora, the subapical annulations on all the femora, the medial annulation and the apices of the tarsi black.

The head shorter than the pronotum, slightly longer than the latter is broad, with the anteocular part shorter than the postocular part, with the upper surface granular (owing to the presence of several tubercles carrying spines on the anteocular region, four medial pairs and three on each side of the head on the posterior part), with about six clear slender spines on each side on the under surface ; antennae with first joint slightly incrassate, clavate apically, spinose basally, and armed with six major spines and several smaller ones on its upper surface, about as long as the anterior femora and slightly longer than the second unarmed joint ; pronotum granular, with four large pairs and five smaller pairs of tuberculate spines on each half of the anterior lobe and with several prominent tubercles, with the posterior lobe slightly quadricarinate, tubercular, the posterior angles prominent, produced outwards and forwards, apically more or less bituberculate ; coria with the veins prominent, with the apices extending to about the base, or slightly over, the fourth dorsal segment ; membrane extending to about the middle of the fifth segment; abdomen with the sixth segment above slightly raised, and the lateral abdominal parts above longitudinally grooved, sparsely spinulose below; prostethium with two tubercles anteriorly below the anterior pronotal angles, with a few spines behind the anterior acetabula; anterior trochanters spinose ventrally; anterior femora with more or less two rows of spines on the upper and lower surfaces (those on the under surface are more powerful, with about six major spines and several smaller ones in each row); intermediate and posterior femora with two irregular rows of spines on their upper surfaces (those near the apices being the longest); tibiae longitudinally densely spinulose.

Length of ♀ about 11 mm.

Breadth of ♀ acr. pron. about 1·3 mm.

Breadth of ♀ acr. abd. about 1·5 mm.

Hab.—Ovamboland—Andoni (M. Exp.).

Sub-fam. 9. **Nabidinae** Stål.

Gen. NABIS Latr.

1807. Latreille (part), Gen., iii, p. 127.
1840. Spinola, Essai, p. 105.
1861. Fieber, Eur. Hem., pp. 43 and 159.
1865. Stål, Hem. Afr., iii, p. 41.
1890. Reuter, Rev. d'Ent., ix, p. 293.

Coriscus Schrank, Faun. Boic., II, i, p. 46, 1801.
,, Stål, Enum., iii, p. 111, 1873.
Reduviolus Kirby in Rich. Faun. Bor. Amer., iv, p. 279, 1902.
,, Kirkaldy, Faun. Hawaiiensis, iii, p. 153, 1902.
Sub-gen. *Nabicula* Kirby, *loc. cit.*
Sub-gen. *Hoplistocelis*, *Acanthonabis*, *Lasiomerus*, *Halonabis*, *Stenonabis* Reuter, Rev. d'Ent., ix, p. 294, 1890.
Sub-gen. *Stalia* Reuter, Oefv. Vet. Ak. Förh., No. 6, p. 94, 1872.
Sub-gen. *Aptus* Hahn, Wanz. Ins., i, fig. 24, A–C, 1831.
Sub-gen. *Aspilaspis* Stål, Enum., iii, p. 114, 1873.

Type.—*N. apterus* Fabr.

N. (*Reduviolus*) *capsiformis* Germ. S.A.M.

1837. Germar in Silberm. Rev., v, p. 132.
1872. Reuter, Oefv. Vet. Ak. Förh., No. 6, p. 88, pl. viii, fig. 9.

angustus Spinola, Essai, p. 107, 1840.

longipennis Costa, Atti. Inst. Sc. Nat. Napol., p. 250, 1848.
,, Fieber, Eur. Hem., p. 161, 1861.
caffra Stål, Oefv. Vet. Ak. Förh., p. 39, 1855.
,, Stål, Hem. Afr., iii, p. 41, 1865.
Hab.—Damaraland—Otjituo (M. Exp.).
Ovamboland—Andoni, Ongandjera (M. Exp.).

N. eva Kirk.

1901. Kirkaldy, Wien. Ent. Zeit., xx, p. 219.
Hab.—Damaraland—de Vylder (sec Reuter).

FAM. **CIMICIDAE** Steph.

(= **CLINOCORIDAE** Kirk.)

Gen. CIMEX Linn.

1758. Linnaeus, Syst. Nat., ed. 10, i, p. 441.
1807. Latreille, Gen., iii, p. 136.
1873. Stål, Enum., iii, p. 103.
1903. Distant, Fauna Brit. Ind. Rhynch., vol. ii, p. 410.
1911. Horvath, Ann. Mus. Nat. Hung., ix, p. 17 syn.

Acanthia Fabricius, Syst. Rhyng., p. 112, 1803.
,, Stål, Hem. Afr., iii, p. 24, 1865.
Klinophilos Kirkaldy, Entomologist, p. 219, 1899.
Clinocoris Kirk., Trans. Am. Ent. Soc., xxxii, p. 147, 1906.
,, Jordan and Roths, Nov. Zool., pp. 93 and 352, 1912.

Type.—*C. lectularius* Linn.

C. lectularius Linn. S.A.M.

1758. Linnaeus, Syst. Nat., ed. 10, i, p. 441.
1873. Stål, Enum., iii, p. 104.
1903. Distant, Fauna Brit. Ind. Rhynch., vol. ii, p. 410.

lectularia Fieber, Eur. Hem., p. 135, 1861 (*Acanthia*).
lectularius Kirkaldy, Entomologist, p. 220, 1899 (*Klinophilos*).
,, Kirk., Trans. Am. Ent. Soc., xxxii, p. 147, 1906 (*Clinocoris*).
,, Jordan and Roths, Nov. Zool., pp. 93 and 352, 1912 (*Clinocoris*).
Hab.—Deutsch-Südwestafrika (after Lübbert).
Damaraland—Otjiwarongo (M. Exp.).

FAM. **CAPSIDAE** Stål.

(=**MIRIDAE** Dohrn.)

Sub-fam. 1. **Mirinae** Reut.

DIV. 1. CAPSARIA Reut.

Gen. CREONTIADES Dist.

1883. Distant, Biol. Centr. Amer. Rhynch. Het., I, xxiii, p. 237, fig. 12.

1912. Poppius, Die Miriden. d. Aeth., reg. 1, in Act. Soc. Sc. Fenn., xli, No. 3, p. 20.

Pantiliodes Noualhier, Ann. Soc. Ent. Fr., p. 15, 1893.

,, Reuter, Hem. Gym. Eur., v, pp. 237 and 354, pl. ii, fig. 14, 1896.

Type.—*C. rubrinervis* Stål.

C. tellinii Reut. S.A.M.

1904–5. Reuter, Oefv. Finsk. Vet. Soc. Förh., xlvii, No. 10, p. 3 (*Pantiliodes*).

Hab.—Damaraland—Narebis (M. Exp.).
Ovamboland—Mafa, Nomtele, Ondongua, Onoolonga, Ongandjera (M. Exp.).

Gen. VOLUMNUS Stål.

1865. Stål, Hem. Afr., iii, p. 19.

1904–5. Reuter, Oefv. Finsk. Vet. Soc. Förh., xlvii, No. 12, p. 11.

1912. Poppius, Die Miriden d. Aeth., reg. 1, in Act. Soc. Sc. Fenn., xli, No. 3, p. 40.

Type.—*V. straminicolor* Stål.

V. elongatus Popp. S.A.M.

1912. Poppius in Act. Soc. Sc. Fenn., xli, No. 3, p. 42.

Hab.—Damaraland—Narebis (M. Exp.), Windhuk (Seewald).

Gen. EURYSTYLUS Stål.

1870. Stål, Oefv. Vet. Ak. Förh., No. 7, p. 671.

1910. Poppius, Oefv. Finsk. Vet. Soc. Förh., xliii, Afd. A, No. 4, p. 2.

1912. Poppius in Act. Soc. Sc. Fenn., xli, No. 3, p. 49.
Eurycyrtus Reuter, Oefv. Finsk. Vet. Soc. Förh., xxi, p. 33.
,, Reuter, Hem. Gym. Eur., v, p. 126, 1896.
,, Reuter, Ann. Soc. Ent. Belg., liv, p. 52, 1910.
Paracalocoris Distant, Fauna Brit. Ind. Rhynch., vol. ii, p. 449 (part), 1903.
Olympiocapsus Kirkaldy, Tr. Ent. Soc. Lond., p. 255, 1902.

Type.—*E. costalis* Stål.

E. bellevoyei Reut. S.A.M.

1896. Reuter, Hem. Gym. Eur., v, p. 127, pl. i, fig. 22.
1905. Reuter, Oefv. Finsk. Vet. Soc. Förh., xlvii, No. 10, p. 10.
1910. Reuter, Ann. Soc. Ent. Belg., liv, p. 50.
1912. Poppius, Act. Soc. Sc. Fenn., No. 3, xli, p. 54.
lanarius Distant, Fauna Brit. Ind. Rhynch., vol. ii, p. 450, 1903.
Hab.—Namaqualand—Kalkfontein (J. Brown).
Damaraland—Nuragas, Windhuk (M. Exp.).
Ovamboland—Kambele Falls, Okualuthi, Ongandjera, Onoolonga (M. Exp.).

E. capensis Dist. S.A.M.

1904. Distant, Ann. Mag. Nat. Hist., xiii, p. 110 (*Paracalocoris*).
1910. Reuter, Ann. Soc. Ent. Belg., liv, p. 53 (*Eurycrytus*).
1912. Poppius, Act. Soc. Sc. Fenn., xli, No. 3, p. 51.
barretti Distant, Ann. Mag. Nat. Hist., xiii, p. 199, 1910 (*Paracalocoris*).
Hab.—Ovamboland—Okovango R. (Eriksson).

Gen. CHARITOCORIS Reut.

1904. Reuter, Ann. Mus. Zool. St. P'bourg., ix, p. 10.
1907. Reuter, Oefv. Finsk. Vet. Soc. Förh., xlix, No. 7, p. 7.

Type.—*C. pallidus* Reut.

C. rufoplagiatus Reut. S.A.M.

1904–5. Reuter, Oefv. Finsk. Vet. Soc. Förh., xlvii, No. 21, p. 3.
1912. Poppius in Act. Soc. Sc. Fenn., xli, No. 3, p. 57.
var. β.
Hab.—Namaqualand—Kalkfontein (J. Brown).

C. sanguineonotatus Reut. S.A.M.

1904. Reuter, Oefv. Finsk. Vet. Soc. Förh., xlvii, No. 10, p. 7, 1905.
1912. Poppius, Act. Soc. Sc. Fenn., xli, No. 3, p. 58.
Hab.—Ovamboland—Andoni, Tamansu, Ongandjera, Ondongua, Kambele Falls, and Otjimbumbe on Kunene R. (M. Exp.).

Gen. STENOTUS Jak.

1877. Jakowleff, Bull. Soc. Nat. Mosc., p. 288.
1896. Reuter, Hem. Gym. Eur., v, pp. 122 and 351, pl. i, fig. 20.
1907. Reuter, Oefv. Finsk. Vet. Soc. Förh., xlix, No. 7, p. 10.
1912. Poppius, Act. Soc. Sc. Fenn., xli, No. 3, p. 59.
Makua Kirkaldy, Entomologist, p. 282, 1902.
Umslopogas Kirk., Tr. Ent. Soc. Lond., p. 254, 1902.
Zulaimena Kirk., *ibid.*, p. 256, 1902.
Koraciocapsus Kirk., *ibid.*, p. 260, 1902.
Tancredus Distant, Fauna Brit. Ind. Rhynch., vol. ii, p. 430, 1903.
Type.—*S. binotatus* Fabr.

S. affinis Popp. S.A M.

1912. Poppius, Act. Soc. Sc. Fenn., xli, No. 3, p. 69.
fasciaticollis Reuter, Oefv. Finsk. Vet. Soc. Förh., xlix, No. 7, p. 11, 1907.
Hab.—Ovamboland—Tamansu, Namakunde (M. Exp.).

S. nigroquadristriatus Kirk. S.A.M.

1902. Kirkaldy, Tr. Ent. Soc. Lond., p. 254, pl. v, fig. 11; pl. vi, figs. 7 and 25 (*Umslopogas*).
1904. Distant, Ann. M. Nat. Hist., ser. 7, xiii, p. 196 (*Megacoelum*).
1912. Poppius, Act. Soc. Sc. Fenn., xli, No. 3, p. 72.
Hab.—Ovamboland—Uwuthija (M. Exp.).

Gen. LYGUS Hahn.

1831. Hahn, Wanz. Ins., i, p. 147.
1875. Reuter, Act. Soc. Faun. and Flor. Fenn., i, p. 61.
Lygocoris Reuter, Bih. Vet. Ak. Handb., III, i, p. 16, 1875.
Orthops Fieber, Wien. Ent. Monatsb., ii, p. 311, 1858.
Lygus Poppius, Act. Soc. Sc. Fenn., xli, No. 3, p. 87, 1912.
Type.—*L. limbatus* Fall.

L. apicalis Fieb. S.A.M.

1861. Fieber, Eur. Hem., p. 275.
1878. B. White, Pr. Zool. Soc. Lond., pp. 463 and 467.
1896. Reuter, Hem. Gym. Eur., v, pp. 110 and 366, pl. v, fig. 1.
1907. Reuter, Oefv. Finsk. Vet. Soc. Förh., xlix, No. 7, p. 14.
1912. Poppius, Act. Soc. Sc. Fenn., xli, No. 3, p. 100.

putoni Mey, Mitth. Schweitz. Ent. Ges., iii, p. 207.
osiris Kirkaldy, Tr. Ent. Soc. Lond., p. 262, 1902.
Hab.—Ovamboland—Ongandjera (M. Exp.).

Gen. PROBOSCIDOCORIS Reut.

1882. Reuter, Oefv. Finsk. Vet. Soc. Förh., xxv, p. 30.
1904–5. Reuter, *ibid.*, xlvii, No. 10, p. 15.
1912. Poppius, Act. Soc. Sc. Fenn., xli, No. 3, p. 135.

Charagochilus Reuter, Ent. Tidskr., p. 196, 1884.
,, Reuter, Oefv. Finsk. Vet. Soc. Förh., xlvi, No. 10, p. 2.
Type.—*P. fuliginosus* Reut.

P. punctaticollis Reut. S.A.M.

1905. Reuter, Oefv. Finsk. Vet. Soc. Förh., xlvii, No. 10, p. 16.
1906–7. Reuter, *ibid.*, xlix, No. 7, p. 19.
1912. Poppius, Act. Soc. Sc. Fenn., xli, No. 3, p. 140.

Hab.—Damaraland—Narebis (M. Exp.).
Ovamboland—Otjimbumbe on Kunene R. (M. Exp.).

DIV. 2. MIRARIA Reut.

Gen. DOLICHOMIRIS Reut.

1882. Reuter, Oefv. Finsk. Vet. Soc. Förh., xxv, p. 29.
1892. Reuter, Ann. Soc. Ent. Fr., lxi, p. 392.
1902. Reuter, Oefv. Finsk. Vet. Soc. Förh., xliv, p. 158.
1912. Poppius, Act. Soc. Sc. Fenn., xli, No. 3, p. 159.

Eioneus Distant, Biol. Centr. Amer. Rhynch. Het., p. 416, 1883.
Type.—*D. linearis* Reut.

D. linearis Reut. S.A.M.

1882. Reuter, Oefv. Finsk. Vet. Soc. Förh., xxv, p. 29.
1902. Reuter, *ibid.*, xliv, p. 159.

1912. Poppius, Act. Soc. Sc. Fenn., xli, No. 3, p. 159.

longula Noualhier, Ann. Soc. Ent. Fr., p. 15, 1893.
tibialis Reuter, *ibid.*, p. 392, 1892.
Hab.—Damaraland—Otjituo (M. Exp.).
Ovamboland—Nomtele, Ondongua, Ongandjera, Mafa, Otjimbumbe on Kunene R. (M. Exp.).

Gen. TRIGONOTYLUS Fieb.

1858. Fieber, Wien. Ent. Monat., ii, p. 302.
1861. Fieber, Eur. Hem., pp. 66 and 243.
1894. Hüeber, Syn. Deut. Blinw., i, pp. 33 and 54.
1909. Reuter, Nearkt. Caps., p. 5.
1912. Poppius, Act. Soc. Sc. Fenn., xli, No. 3, p. 161.

Sub-gen. *Trigonotylus* Reuter, Gen. Cimic. Eur., p. 9, 1875.
,, ,, Reuter, Rev. Crit. Caps., i, p. 79; ii, p. 6, 1875.
Callimiris Reuter, Oefv. Svensk. Vet. Ak. Förh., No. 9, p. 60, 1875.

Type.—*T. ruficornis* Geoffr.

T. brevipes Jak. S.A.M.

1880. Jakowleff, Hor. Soc. Ent. Ross., xi, p. 63 (? 215).
1904. Reuter, Ann. Mus. Zool. St. P'bourg., ix, p. 5.
1909. Reuter, Nearkt. Caps., p. 6.
1912. Poppius, Act. Soc. Sc. Fenn., xli, No. 3, p. 161.

ruficornis var. *tenuis* Reuter, Rev. d'Ent., p. 208, 1893.
pallidicornis Reuter, Oefv. Finsk. Vet. Soc. Förh., xlii, p. 161, 1899.
tenuis Reuter, *ibid.*, xlix, No. 7, p. 1, 1907.
Hab.—Damaraland—Waterberg (M. Exp.).
Ovamboland—Ongandjera, Ukualonkathi (M. Exp.).

Sub-fam. 2. **Heterotominae** Reut.

Div. HETEROMARIA Reut.

Gen. ORTHOTYLUS Fieb.

1858. Fieber, Wien. Ent. Monat., ii, p. 315.
1875. Reuter, Gen. Cimic. Eur., p. 32.
1906. Kirkaldy, Tr. Am. Ent. Soc., xxxii, p. 127
1912. Oshanin, Kat. Palae. Hem., p. 73.

1916. van Duzee, Proc. Cal. Acad. Sci., ser. 4, vi, p. 87.
Pachylops Fieber, Wien. Ent. Monat., ii, p. 314, 1858.
,, Fieber, Eur. Hem., p. 70, 1861.
Litocoris Fieber, *ibid.*, pp. 70, 287, 1861.
Litosoma Douglas and Scott, Brit. Hem., p. 334, 1865.
,, Kirkaldy, Tr. Am. Ent. Soc., xxxii, p. 127, 1906.
Melanotrichus Reuter, Gen. Cimic. Eur., p. 35, 1875.
,, Kirk., Tr. Am. Ent. Soc., xxxii, p. 127, 1906.
Halocapsus Puton, Ann. Soc. Ent. Fr., viii Bul., p. xxxiii, 1878.

Type.—*O. nassutus* Fabr.

O. tabescens Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 317 (*Capsus*).
1865. Stål, Hem. Afr., iii, p. 22 (*Eurymerocoris*).
Hab.—Damaraland—“ Terr. fluv. Swakop ” (after Stål).

Sub-fam. 3. **Phylinae** Reut.

Gen. BRACHYCRANELLA Reut.

1905. Reuter, Oefv. Vet. Soc. Förh., xlvii, 12, p. 19.
1914. Poppius, Act. Soc. Sc. Fenn., tom. xliv, 3, p. 107.

Type.—*B. viridipunctata* Stål.

B. viridipunctata Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 317 (*Capsus*).
1865. Stål, Hem. Afr., iii, p. 23 (*Eurymerocoris*).
1914. Poppius, Act. Soc. Sc. Fenn., tom. xliv, 3, p. 108.
Hab.—Damaraland—“ Terr. fluv. Swakop ” (after Stål).

Gen. LEPTOSCANTHUS Reut.

1905. Reuter, Oefv. Finsk. Vet. Soc. Förh., xlvii, 22, p. 7.
1914. Poppius, Act. Soc. Sc. Fenn., tom. xliv, 3, p. 108.

Type.—*L. flaveolus* Reut.

L. flaveolus Reut.

1905. Reuter, *loc. cit.*, p. 8.
Hab.—Damaraland—“ Swakop ” (Wahlberg).

FAM. **ANTHOCORIDAE** Am. et Serv.

Sub-fam. **Lyctocorinae** Reut.

Gen. XYLOCORIS Duf.

1831. Dufour, Ann. Sc. Nat. Paris, xxii, p. 423.
1835. Burmeister, Handb., ii, p. 289.
1843. Amyot et Serville, Hem., p. 263.
1865. Stål, Hem. Afr., iii, p. 23.
1912. Reuter, Oefv. Finsk. Vet. Soc. Förh., liv, Afd. A, No. 7, p. 25.

Piezostethus Fieber, Wien. Ent. Monat., iv, p. 265, 1860.
,, Reuter, Oefv. Vet. Ak. Förh., xxviii, p. 410, 1871.
,, Reuter, Monogr. Anthoc., p. 29, 1884.
,, Banks, Cat. Nearc. Hem., p. 24, 1910.
Piestostethus Marshall, Ent. Month. Mag., iv, p. 281, 1868.

Type.—*X. rufipennis* Duf.

X. afer Reut.

1884. Reuter, Monogr. Anthoc., pp. 31 and 38.
1886. Puton, Cat., p. 43.

Hab.—“ Damaraland ” (after Reuter).

FAM. **PELOGONIDAE** Stål.

Sub-fam. **Pelogoninae**

Gen. PELOGONUS Latr.

1809. Latreille, Gen. Crust. Ins., iv, p. 384.
1835. Burmeister, Handb., II, i, p. 202.
1865. Stål, Hem. Afr., iii, p. 170.
1900. Champion, Centr. Amer. Rhyn., ii, p. 344.

Ochthera Bergroth, Bull. Soc. Ent. Fran., p. lxvi, 1890.
Ochtherus Latreille, iii, p. 142, 1807.

Type.—*P. marginatus* Latr.

P. marginatus Latr. S.A.M.

1804. Latreille, Hist. Ins., xii, p. 242 (*Acanthia*).
1807. Latreille, Gens. Ins., iii, p. 143 (*Ochtherus*).

1843. Amyot et Serville, Hem., p. 409 (*Pelogonus*).
1865. Stål, Hem. Afr., iii, p. 170.
1897. Montandon, Ann. Mus. Civ. Gen., xxxvii, p. 365.

caffer Stål, Oefv. Vet. Ak. Förh., p. 46, 1855.
indicus Guerin, Rev. Zool., p. 113, 1843.
Hab.—Namaqualand—Great Fish River, near Gibeon (M. Exp.).

FAM. **NEPIDAE** Stål.

Gen. LACCOTREPHES Stål.

1865. Stål, Hem. Afr., iii, p. 186.
1868. Stål, Hem. Fabr., i, p. 134
1906. Distant, Fauna Brit. Ind. Rhynch., iii, p. 17.

Nepa von Ferrari, Ann. k. k. Nat. Hofm. Wien., iii, pp. 162 and 163, 1888.

Type.—*L. fabricii* Stål.

L. fabricii Stål. S.A.M.

1868. Stål, Hem. Fabr., iii, p. 186.
1888. von Ferrari, Ann. k. k. Nat. Hofm. Wien., iii, p. 176 (*Nepa*).

grossus Stål, Hem. Afr., iii, p. 186, 1865.
grossa Fabricius, Syst. Rhyng., p. 107, 1803 (*Nepa*).
,, Olivier, Encycl. meth., viii, p. 189, 1811 (*Nepa*).
,, Amyot et Serville, Hem., p. 440, 1843 (*Nepa*).
Hab.—Namaqualand—Chamis (Molière).
Damaraland—Windhuk (Techow), Otjosondu (Seiner), Grootfontein (Volkmann).
Ovamboland—Mafa (M. Exp.), Ondongua (H. Anderson).

FAM. **NAUCORIDAE** Fieb.

Sub-fam. **Laccocorinae** Mont.

Gen. LACCOCORIS Stål.

1856. Stål, Oefv. Vet. Ak. Förh., p. 198.
1865. Stål, Hem. Afr., iii, p. 177.
1897. Montandon, Verh. Zool. Bot. Ges. Wien., xlvii, p. 436.

Type.—*L. spurcus* Stål.

L. limigenus Stål. S.A.M.

1865. Stål, Hem. Afr., iii, p. 178.
1897. Montandon, Verh. Zool. Bot. Ges. Wien., xlvii, p. 440.

Hab.—" Deutsch-Südwestafrika " (after Tarvibach and Seewald).
Damaraland—Gibeon (M. Exp.), Great Fish River (M. Exp.), " Swakop River " (coll. H. Pearson), Grootfontein (v. Erffa), " Kuisib region " (after Stål).

FAM. **BELOSTOMATIDAE** Stål.

Gen. SPHAERODEMA L. de Castelnau.

1832. L. de Castelnau, Ess. Hem., p. 18.
1900. Montandon, Bull. Soc. Sc. Bucarest, ix, p. 264.
1903. Montandon, *ibid.*, xii, p. 120.
1906. Distant, Fauna Brit. Ind. Rhynch., vol. iii, p. 35.

Diplonychus Amyot et Serville, Hem., p. 436, 1843.
,, Mayr, Verh. Zool. Bot. Ges. Wien., xxi, p. 435, 1871.
Appasus Amyot et Serville, Hem., p. 436, 1843.
,, Mayr, Verh. Zool. Bot. Ges. Wien., xxi, p. 433, 1871.
Nervinops Dufour, Ann. Soc. Ent. Fr., p. 398, 1863.

Type.—*S. annulata* Fabr.

S. nepoides Fabr. S.A.M.

1803. Fabricius, Syst. Rhynch., iii, p. 7.
1862. Schaum, Peters' Reis. Moss. Ins., p. 50, pl. ii, fig. 10 (*Appasus*).
1863. Dufour, Ann. Soc. Ent. Fr., p. 394 (*Appasus*).

natator Amyot et Serville, Hem., p. 431, 1843 (*Appasus*).
? *luridus* Germar, Silberm. Rev., v, p. 121, 1837 (*Diplonychus*).
aegyptus Herr. Schaeffer, Wanz. Ins., viii, p. 26, fig. 800, 1848 (*Diplonychus*).
coenosus Stål, Oefv. Vet. Ak. Förh., p. 46, 1855 (*Diplonychus*).
,, Dufour, Ann. Soc. Ent. Fr., p. 394, 1863.
Hab.—Ovamboland—Mafa, Nomtele, Ukualonkathi (M. Exp.).

Gen. BELOSTOMA Latr.

1807. Latreille, Gen. Crust. et Ins., iii, p. 144.
1843. Amyot et Serville, Hem., p. 427.

1851. Fieber, Gen. Hydroc., p. 21, t. 2D.
1865. Stål, Hem. Afr., iii, p. 182.
1871. Mayr, Verh. Zool. Bot. Ges. Wien., xxi, pp. 402 and 422.
1906. Distant, Fauna Brit. Ind. Rhynch., vol. iii, p. 37.

Belostomum Burmeister, Handb., II, i, p. 195, 1835.
Amorgius Stål, Hem. Afr., iii, p. 179, 1865.

Type.—*B. indicum* Lep. et Serv.

B. niloticum Stål. S.A.M.

1854. Stål, Oefv. Vet. Ak. Förh., p. 240, 3.
1861. Stål, *ibid.*, p. 205, 2.
1865. Stål, Hem. Afr., iii, p. 183.
1871. Mayr, Verh. Zool. Bot. Ges. Wien., xxi, p. 426.

patruele Stål, Oefv. Vet. Ak. Förh., p. 240, 1854.
pruinosum Dufour, Ann. Soc. Ent. Fr., p. 381, 1863.
bispinulosum Dufour, *ibid.*, p. 381, 1863.
indicum Dufour, *ibid.*, p. 384, 1863 (in part).
lutescens Dufour, *ibid.*, p. 384, 1863.
cordofanus Mayr, Verh. Zool. Bot., v, p. 17, 1852 (*Lethocerus*).
Hab.—" Deutsch-Südwestafrika " (after Lübbert).
Damaraland—Grootfontein (v. Erffa), Swakopmund (Casper).
" Damaraland " (coll. Eriksson).

Fam. **NOTONECTIDAE** Stål.

Sub-fam. **Notonectinae** Kirk.

Gen. ANISOPS Spin.

1837. Spinola, Ess. Hem., p. 58.
1851. Fieber, Rhynchotogr., p. 57.
1865. Stål, Hem. Afr., iii, p. 191.
1904. Kirkaldy, Wien. Ent. Zeit., xxiii, p. 111.

Type.—*A. sardea* Herr. Schf. (=*nivea* Spin.).

A. perpulcher Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 89.
1865. Stål, Hem. Afr., iii, p. 192.

1904. Kirkaldy, Wien. Ent. Zeit., xxiii, p. 119 (as syn. of *A. varia* Fieb.).

Hab.—Namaqualand—Great Karasberg (Schultze), Chamis, Berseba (Schultze).
Damaraland—Otjituo (M. Exp.).

A. sardea Herr. Schf. S.A.M.

1852. Herr. Schaeffer, Wanz. Ins., ix, p. 40, fig. 904.
1904. Kirkaldy, Wien. Ent. Zeit., xxiii, p. 114, et syn.

nivea Spinola, Ess. Hem., p. 58, 1837.
productus Fieber, Rhynchotogr., p. 60, 1851.
,, Stål, Hem. Afr., iii, p. 191, 1865.
natalensis Stål, Oefv. Vet. Ak. Förh., xii, p. 89, 1855.
nanula Walker, Zoologist, p. 2381, 1870 (*Notonecta*).
? *alba* Forskål, Descr. Anim. Orient., p. xxiii, 1775 (*Notonecta*).
Hab.—" Deutsch-Südwestafrika " (after Seiner).
Damaraland—" Kuisib region " (after Stål).
Ovamboland—Onoolonga (M. Exp.).

Fam. **CORIXIDAE** Dohrn.

(=**SIGARIDAE** Stål.)

Gen. Corixa Geoffr.

1762. Geoffroy, Hist. abrég. Ins., p. 477.
1835. Burmeister, Handb. Ent., p. 186.
1906. Distant, Fauna Brit. Ind. Rhynch., vol. iii, p. 49.

Corisa Amyot et Serville, Hem., p. 445, 1843.
Sigara Fabricius, Syst. Ent., p. 691, 1775.
,, Stål, Hem. Afr., iii, p. 193, 1865.

Type.—*C. geoffroyi* Leach.

C. hieroglyphica Duf. S.A.M.

1833. Dufour, Hem., p. 86, figs. 85–87.
1861. Fieber, Eur. Hem., p. 93.
1898. Kirkaldy, Entomologist, p. 3.
1906. Distant, Fauna Brit. Ind. Rhynch., vol. iii, p. 49.
1909. Kuhlgatz in Die Süsswasserfauna Deutschlands, vii, p. 92.

Hab.—Damaraland—Narebis (M. Exp.).

Gen. MICRONECTA Kirk.

1897. Kirkaldy, Entomologist, p. 260.
1906. Distant, Fauna Brit. Ind. Rhynch., vol. iii, p. 50.
Sigara Fabricius, Ent. Syst., iv, p. 59, 1794 (part).
,, Fabricius, Syst. Rhyng., p. 104, 1803 (part).
,, Stål, Hem. Afr., iii, p. 193, 1865.

Type.—*M. minutissima* Linn.

M. scutellaris Stål. S.A.M.

1858. Stål, Oefv. Vet. Ak. Förh., p. 319, 33.
1865. Stål, Hem. Afr., iii, p. 193.
Hab.—Damaraland—" Kuisib region " (after Stål), Grootfontein (coll. Dr. Purcell).
Ovamboland—Kambele Falls on Kunene R. (M. Exp.).

II. HOMOPTERA.

FAM. **CICADIDAE** Westwd.

Sub-fam. 1. **Cicadinae** Dist.

DIV. POLYNEURARIA Dist.

Gen. MUNZA Dist.

1904. Distant, Ann. Mag. Nat. Hist. (7), xiv, p. 297.
1913. Distant, Gen. Ins., fasc. cxxxv–cxliii, 142, p. 6.

Type.—*M. laticlavia* Stål.

M. basimacula Walk.

1850. Walker, List Hom., vol. i, p. 10 (*Platypleura*).
1906. Distant, Ins. Trsvl., vol. i, p. 171, t. 17, fig. 3, *a*, *b*.
reducta Walker, List Hom., vol. i, p. 11, 1850 (*Platypleura*).
pygmoea Jacobi, Sjöstedt, Kilim.-Meru. Exp. Hom., t. 1, fig. 3, 1910.
Hab.—Damaraland—Windhuk (Rolle).

M. laticlavia Stål. S.A.M.

1858. Stål, Oefv. Vet. Ak. Förh., p. 320 (*Platypleura*).
1886. Stål, Hem. Afr., iv, p. 20 (*Platypleura*).
penicillata Walker, List Hom. Suppl., p. 2, 1858 (*Platypleura*).
peringueyi Distant, Ann. Mag. Nat. Hist. (6), vol. ix, p. 314, 1892 (*Poecilopsaltria*).

Hab.—Namaqualand—Bethany (Schenck).
Damaraland—"Damaraland" (coll. Tatton), Otjiwarongo (M. Exp., J. S. Brown), Okahandja (Dinter), Otjosondu (Casper), Rehoboth (Scheben), Grootfontein (v. Erffa), Omaheke (v. Trotha) and "Terr. fluv. Swakop" (Stål), Windhuk (M. Exp.).

M. laticlavia Stål var. *lübberti* Schum.

1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 84.

Hab.—Damaraland—Grootfontein (v. Erffa), Otjosondu (Casper).

M. laticlava Stål var. *semitransparens* Schum.

1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 84.

Hab.—Damaraland—Otjosondu (Casper), Okahandja (Schultze).

M. otjosonduensis Schum.

1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 85.

Hab.—Damaraland—Otjosondu (Casper).

M. pallescens Schum.

1913. Schum., Denkschr. Ges. Jena, xvii, p. 85.

Hab.—Namaqualand—Bethany (Schenck).

M. furva Distant.

1897. Distant, Ann. Mag. Nat. Hist. (6), vol. xix, p. 126 (*Poecilopsaltria*).

1906. Distant, Ins. Trsvl., vol. i, p. 171, t. 17, fig. 2, *a*, *b*.

oculata Jacobi, Sjöstedt., Kilim.-Meru. Exp. Hom., t. 1, fig. 2, 1910.
Hab.—Damaraland—Windhuk (Rolle).

M. trimeni Dist. S.A.M.

1892. Distant, Ann. Mag. Nat. Hist. (6), vol. ix, p. 313 (*Poecilopsaltria*).

Hab.—Damaraland—Karibib (A. Ullmann).

M. venusta n. sp. S.A.M.

(Pl. VI, fig. 3.)

Body plump and short; the front of the head projecting slightly; the lateral margins of the pronotum slightly convex, rounded; the opercula broad and broadly rounded posteriorly; the body black above and pale stramineous below, more or less covered with white tomentum posteriorly on the mesonotum, basally on the abdomen above, dorsally on the penultimate segment and on the under surface; the raised parts on the pronotum between the oblique black depressions, an obscure spot on the mesonotum in front of the cruciform elevation, the apical half of the basal cells on the tegmina, the face and under surface of the head, the apical half of the rostrum, the abdomen below in part, the ventral surface of the male genital appendage and the tarsi pale reddish brown or testaceous; two spots on the front of the head, the transverse ridges on the face, a medial transverse fascia in front of the red ocelli, a lateral transverse fascia and a small basal spot on each side near the posterior margin, four central spots on each side of the medial longitudinal abbreviated black fascia and the lateral parts of the posterior margin on the pronotum, the narrow lateral margins and the cruciform elevation on the mesonotum, the apical margins of the abdominal segments beneath and the apex of the abdomen below ochraceous; the tegmina vitreous, shining, with the costal part, the basal part, the claval area, and the veins pale ochraceous, with the small, irregular, fine plume-like and dendritiform markings on the cells brownish, with the apical parts of the three outermost ulnar areas, the apex of the claval areas and two series of small spots near the apices of the longitudinal apical veins deep dark brown; the wings white, hyaline, with the basal part very pale ochraceous, and the apical parts of the claval areas and the inner parts of the veinless membrane milky white, some of the veins, a medial infusion near the basal parts of some of the apical cells, an infusion near the apices of the longitudinal veins contiguous to the claval area, and the subapical parts of the claval areas brownish.

Length of ♂ about 16 mm. (excl. tegm.).
Max. breadth of pron. about 7 mm.
Max. breadth of abd. about 7½ mm.
Exp. tegm. 44 mm.
Hab.—Damaraland—Tsumeb (E. Köchig).

Gen. PLATYPLEURA Am. et Serv.

1843. Amyot et Serville, Hem., p. 465.
1866. Stål, Hem. Afr., iv, pp. 2 and 9.
1906. Distant, Fauna Brit. Ind. Rhynch., iii, p. 58.
1913. Distant, Ins. Gen., fasc. cxxxv–cxliii, 142, p. 7.

Sub-gen. *Oxypleura* Amyot et Serville, Hem., p. 469, 1843.
,, *Poecilopsaltria* Stål, Hem. Afr., iv, p. 2, 1866.
,, ,, Distant, Mon. Orient. Cicad., p. 5, 1889.
Type.—*P. stridula* Linn.

P. brevis Walk. S.A.M.

1850. Walker, List Hom., i, p. 19.
1890. Karsch, Berl. Ent. Zeit., xxxv, p. 104.
simplex Walker, *loc. cit.*, p. 22.
neurosticta Schaum, Peters' Reis. nach Moss. Ins., p. 55, t. 11, fig. 12, 1862 (*Cicada*).
sobrina Stål, Oefv. Vet. Ak. Förh., p. 89, 1855 (*Oxypleura*).
patruelis Stål, *loc. cit.*, p. 90 (*Oxypleura*).
,, Butler, Cist. Ent., i, p. 195, 1874 (*Platypleura*).
Hab.—Damaraland—Windhuk (Rolle).
Ovamboland—Otjimbumbe on Kunene R. (M. Exp.).

P. divisa Germ. S.A.M.

1834. Germar in Silberm. Rev. and Ent., ii, p. 80, t. xxiii (*Cicada*).
1850. Walker, List Hom., i, p. 3.
1866. Stål, Hem. Afr., iv, p. 16.
Hab.—Damaraland—Otjiwarongo (M. Exp., J. S. Brown).

P. divisa Germ. var. *techowi* Schum.

1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 87.
Hab.—Damaraland—Windhuk (Techow).

P. fenestrata Schum.

1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 86.
Hab.—" Deutsch-Südwestafrika " (Lübbert, Lindt).
Damaraland—Windhuk (Techow), Omaheke (v. Trotha).

P. fenestrata var. *vitreomaculata* Schum.

1913. Schumacher, *loc. cit.*
Hab.—Damaraland—Windhuk (Techow).

P. severini Dist. S.A.M.

1893. Distant, Ann. Soc. Ent. Belg., xxxvii, p. 76.
Hab.—Namaqualand—Kalkfontein (J. Brown).
Damaraland—Windhuk (M. Exp.), Tsumeb (Köchig).

Gen. PYCNA Am. et Serv.

1843. Amyot et Serville, Hem., p. 463.
1904. Distant, Ann. Mag. Nat. Hist., xiv, p. 298.
1906. Distant, Fauna Brit. Ind. Rhynch., iii, p. 71.
1913. Distant, Gen. Ins., fasc. cxxxv–cxliii, 142, p. 15.

Type.—*P. strix* Bullé.

P. vitrea Schum.

1913. Schumacher, Denkschr. Ges. Jena, xvii, p. 87.

Hab.—Damaraland—Windhuk (Rolle).

Sub-fam. 2. **Tibicininae** Dist.

DIV. 1. TAPHURARIA Dist.

Gen. MONOMATAPA Dist.

1897. Distant, Ann. Mag. Nat. Hist., xix, p. 129.

Type.—*M. insignis* Dist.

M. insignis Dist. S.A.M

1897. Distant, *loc. cit.*

Hab.—Damaraland—Tsumeb (M. Exp.).

DIV. 2. PARNISARIA Dist.

Gen. ZOUGA Dist.

1900–11. Distant, Ins. Trsvl., vol. i, p. 176.

Type.—*Z. typica* Dist.

Z. apiana n. sp. S.A.M.

(Pl. VI, fig. 4.)

The body black above and below, densely, greyishly pilose; the posterior margin and the posterior lateral angles on the pronotum, the posterior edges of the tympana, the narrow apical margins of the dorsal abdominal segments from the third to the seventh, the opercula, the narrow deflected margins of the abdomen below, the apical part of the penultimate ventral abdominal segment, and the ventral surface of the ♂ genital segment dull ochraceous; a spot on each side of the cruciform elevation whitishly pilose; the ocelli, the rostrum and the anterior legs sepia brown; the claws of the tarsi and the spines on the posterior tibiae reddish brown, tegmina and the wings vitreous, transparent; the veins of the tegmina dull ochraceous near the base and the basal cell; the extreme base, the narrow anterior costal margin, the outer apical margin of the basal cell, and the longitudinal veins beyond the claval and two inner ulnar areas dark brown to black.

The head about as long as the pronotum; the oblique depressions on the pronotum well marked and the posterior lateral angles prominently rounded, projecting slightly outwards and forwards; mesonotum convex, with a groove-like marking on each side medially; anterior femora armed on their under surfaces with three distinct spines, one near the base, one subapically, and a smaller one in the middle; opercula small, oblique and rounded posteriorly.

This species is allied to *Z. typica* Dist.

Length of ♂ with tegm. about 20 mm.

Length of body (excl. tegm.) about 14½ mm.

Breadth about 5½ mm.

Hab.—Ovamboland—Andoni (M. Exp.).

Gen. ABAGAZARA Dist.

1905. Distant, Ann. Mag. Nat. Hist. (7), xvi, p. 206.

Type.—*A. bicolorata* Dist.

A. omaruruensis n. sp. S.A.M.

(Pl. VI, fig. 5.)

The body short, somewhat laterally compressed and attenuated posteriorly in the ♀; the head longer than the pronotum; the head and pronotum together slightly longer than the mesonotum; the apex of the cruciform elevation about at the middle of the body; upper and under surfaces covered with dense greyish white tomentum; the head, the antennae, the pronotum, the mesonotum, the cruciform elevation, the first two abdominal segments above, the basal margins of the other segments, the dorsal surface of the penultimate segment, the dorsal and lateral surfaces of the ♀ genital segment, the medial longitudinal dorsal fascia extending from the cruciform elevation to the apex of the abdomen, the mesosternum, the longitudinal fasciae on the coxae, trochanters, femora, the bases and fasciae on the tibiae, the bases and apices of the tarsi, a row of spots on each side of the abdomen beneath, and the ovipositor deep blackish brown to black; a longitudinal spot on the front of the head, the rostrum, a spot on each side in front of the eye, the narrow anterior and the broad posterior margins and the posterior lateral angles on the pronotum, the basal lateral margins, a medial U-shaped fascia, and a fascia on each side continuous with the forks of the cruciform elevation on the mesonotum, the margins of the cruciform elevation, the under surface of the body, the ventral surface of the genital segment (♀), and the legs pale yellowish white; the apical margins of the second to sixth abdominal segments above, and an obscure subbasal annulation on the tibiae pale reddish.

The front of the head projecting prominently; the face prominent, convex; rostrum reaching the intermediate coxae; pronotum narrow anteriorly, with two oblique, well-marked fissures on each side, with the posterior lateral angles slightly ampliated, prominent, projecting outwards and slightly forwards; tegmina transparent; opalescent, with a faint milky tinge, with the veins pale ochraceous to pale reddish white, with the narrow costal margin, the basal parts of the cell veins, the posterior margins of the claval areas, the apical parts of the ulnar veins, and the apical veins brown to black, with two faint brownish spots on the apices of the two outermost ulnar veins; wings transparent, opalescent, with a milky-white tinge, with the basal parts yellowish white, with the veins reddish white, with the posterior margins of the claval areas and the apical veins brown; opercula vestigial, oblique; anterior femora with three distinct spines on their under surfaces.

Length of ♀ (excl. tegm.) about 17½ mm.
Max. breadth of pron. about 6 mm.
Max. breadth of abd. about 5½ mm.
Exp. tegm. about 46½ mm.
Hab.—Damaraland—Omaruru (J. S. Brown).

Gen. HENICOTETTIX Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 320.
1866. Stål, Hem. Afr., iv, pp. 9 and 48.
1890. Karsch, Berl. Ent. Zeit., xxxv, p. 111.

Type.—*H. hageni* Stål.

H. hageni Stål.

1858. Stål, *loc. cit.*
1866. Stål, *loc. cit.*, p. 49.
Hab.—Damaraland—“ Terr. fluv. Swakop ” (after Stål).

Gen. TAIPINGA Dist.

1905. Distant, Ann. Mag. Nat. Hist., xvi, p. 210.
1906. Distant, Cat. Rhynch. Homop., Part 1, Cicadidae, pp. 140 and 148.

Type.—*T. nana* Walk.

T. consobrina Dist. S.A.M.

1906. Distant, Ann. Mag. Nat. Hist., xvii, p. 386.
Hab.—Damaraland—Gaub, Nuragas (M. Exp.).

FAM. **FULGORIDAE** Leach.

Sub-fam. 1. **Fulgorinae** (Stål) Dist.

DIV. APHANARIA Dist.

Gen. EDDARA Walk.

1858. Walker, List Hom. Suppl., p. 57.
1900–11. Distant, Ins. Trsvl., vol. i, p. 187.
Glagovia Stål, Berl. Ent. Zeit., iii, p. 313, 1859.
,, Stål, Hem. Afr., iv, p. 147, 1866.

Type.—*E. euchroma* Walk.

E. euchroma Walk. S.A.M.

1858. Walker, List Hom. Suppl., p. 58.
1900–11. Distant, Ins. Trsvl., vol. i, p. 188, pl. xviii, fig. 14*a*.
bella Stål, Berl. Ent. Zeit., iii, p. 313, 1859.
,, Stål, Hem. Afr., iv, p. 147, 1866.
Hab.—Ovamboland (coll. ?).

Sub-fam. 2. **Eurybrachydinae** (Stål) Dist.

Gen. PAROPIOXYS Karsch.

1890. Karsch, Berl. Ent. Zeit., xxxv, p. 57.
1895. Karsch, Ent. Nachrich., xxi, p. 210.

Type.—*P. sublimis* Karsch.

P. jucundus Dist. S.A.M.

1899. Distant, Ann. Mag. Nat. Hist., iv, p. 114.
1900–11. Distant, Ins. Trsvl., vol. i, p. 189, tab. xviii, fig. 9*a*.
Hab.—Damaraland—Tsumeb (M. Exp.).

Gen. METOPONITYS Karsch.

1890. Karsch, Berl. Ent. Zeit., xxxv, Heft 1, p. 59.

Type.—*M. morgeni* Karsch.

M. testudineus n. sp. S.A.M.

(Pl. VII, figs. 1 and 1*a*.)

The face, body and tegmina above brownish ochraceous, "tortoise-shell-like," variegated with irregular black spots and infusions; the body beneath ochraceous; the apical margin of the vertex, a short transverse fascia across the tegmina at about the middle, an oblique fascia on each tegmen extending from beyond the middle of the costal margin posteriorly, a spot beyond the apex of the clavus, the apices of the tegmina, three spots on each side on the posterior costal or stigmatic region, the basal margins of the abdomen and the broad basal part of the genital segment beneath shining black; the anterior and intermediate legs, a narrow fascia and some spots to the posterior femora, the bases and posterior or outer laminate surfaces of the posterior tibiae, the apices of their spines, and the tarsi dark brown to black; the lateral parts of the face and clypeus, a small basal spot on the vertex, the anterior part and margin of the pronotum, a round spot on each tegmen at about the middle on the cubital vein, the posterior costal or stigmatic part, the apical margins of the abdomen beneath, the apex of the genital segment, some spots on the anterior and intermediate legs, the posterior femora, the inner surfaces of the posterior tibiae and the bases of their spines ochraceous.

The head broad, truncately rounded anteriorly, with the margins round the vertex ridge-like; eyes oblique, touching the pronotum; face broad, angularly produced on each side below the eyes; clypeus with the base sinuate; pronotum rounded anteriorly, with the posterior margin nearly straight, with two small central, discal, dot-like impressions; mesonotum about as long as head and pronotum together, quinquecarinate, with the medial carina feebly developed, with the two lateral ones short, oblique, and abbreviated; tegmina broadly rounded antero-laterally, with the apical margins very oblique, more or less straight, with the apical parts truncately rounded, produced outwards and slightly upwards (Pl. VII, figs. 1 and 1*a*); clavus with two longitudinal veins, with transverse veins; tegmen pilose along the veins, the costal margin, and apical margins, with four longitudinal veins, with distinct and indistinct cross-veins (especially near the apical region), with the veins on the apex obscure; costal membrane with several oblique cross-veins; wings (as far as can be seen in the specimen) pale ochraceous, with their apical parts pilose and infuscated; anterior and intermediate femora and tibiae broad, flattened; posterior tibiae trispinose.

Length incl. tegm. about 9 mm.
Max. breadth about 5 mm.
Length of tegm. alone about 8 mm.
Hab.—Ovamboland—Otjimbumbe on Kunene R. (M. Exp.).

Sub-fam. 3. **Dictyopharinae** (Stål) Dist.

Gen. ASELGEIA Walk.

1851. Walker, List Hom., ii, p. 324.

Type.—*A. ramulifera* Walk.

A. ramulifera Walk. S.A.M.

1851. Walker, *loc. cit.*, p. 324.
1900–11. Distant, Ins. Trsvl., vol. i, p. 190, pl. xix, fig. 4*a*.

Hab.—Damaraland—Tsumeb (M. Exp.).

Gen. DICTYOPHARA Germ.

1833. Germar, Silberm. Rev., i, p. 175.
1866. Stål, Hem. Afr., iv, p. 154.
1906. Distant, Fauna Brit. Ind. Rhynch., iii, p. 241.

Dictiophora Spinola, Ann. Soc. Ent. Fr., p. 290, 1839.
Pseudophana Burmeister, Handb., II, i, p. 159, 1835.
Chanithus Amyot, Ann. Soc. Ent. Fr., p. 160, 1847.
Nersia Stål, Rio Jan. Hem., ii, p. 62, 1861.
Thanatodictya Kirkaldy, Rep. Exp. St. Haw. Pl. Ass., pt. ix, p. 392, 1906.
Sub-gen. *Thanatodictya*, *Lucinda* and *Niculda* Kirk., *loc. cit.*, pp. 392 and 393, 1906.

Type.—*D. europaea* Linn.

D. rochetii Guér. S.A.M.

1849. Guerin, Lef. Voy. en Abyss. Ins., p. 342, pl. vi, fig. 8 (*Fulgora*).
1866. Stål, Hem. Afr., iv, p. 155.

caffra Stål, Oefv. Vet. Ak. Förh., p. 91, 1855 (*Pseudophana*).
Hab.—Great Namaqualand—Kalkfontein (J. Brown).

Gen. PUTALA Mel.

1903. Melichar, Hom. Faun. Ceyl., p. 26.
1906. Distant, Fauna Brit. Ind. Rhynch., iii, p. 246.

Type.—*Prostrata* Melich.

P. transvaaliensis Dist.

1906. Distant, Tr. S. Afr. Ph. Soc., xvi, p. 416.
1900–11. Distant, Ins. Trsvl., vol. i, p. 191, pl. xix, figs. 2*a*, 2*b*.

Hab.—Damaraland—Grootfontein-Namutoni (Seewald).

Gen. STRONGYLODEMAS Stål.

1853. Stål, Oefv. Vet. Ak. Förh., p. 265.
1866. Stål, Hem. Afr., iv, pp. 152 and 161.

Type.—*S. circulare* Stål.

S. circulare Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 92.
1866. Stål, Hem. Afr., iv, p. 161.

Hab.—Ovamboland—Mafa (M. Exp.).

* INTANDELA n. gen.

Head, including eyes, narrower than pronotum ; vertex moderately porrect, somewhat conically produced in front of the eyes, with the margins carinate and a medial longitudinal carination ; face elongated, feebly convex, with the margins slightly ridged, narrower anteriorly than posteriorly where the margins are rounded, with three longitudinal carinae, confluent anteriorly ; clypeus triangular, noncarinate ; eyes suboval, slightly flattened posteriorly (side view) ; ocelli wanting ; second antennal joints globular ; pronotum convexly arched anteriorly,

* Kaffir for a "creeper."

broadly angularly sinuate posteriorly, tricarinate, with the anterior margin distinctly carinate; mesonotum tricarinate, with the lateral margins ridged; tegmina coriaceous, elongately oval, rounded posteriorly; claval suture present; clavus with two and tegmen with five longitudinal carinately elevated veins; cross-veins absent; costal membrane fairly broad; wings present (as far as can be seen in the specimen) with closed tegmina; abdomen (from beneath) broad and flat; posterior coxae and trochanters strongly developed, slightly elevated and projecting over the basal half of the abdominal segments; femora slightly compressed; anterior and intermediate tibiae slightly compressed and sulcated above; posterior tibiae slightly, laminately extended inwards and outwards, with three spines; posterior tarsi with the basal joint the longest.

From the description there seems to be a relationship between this genus and the genus *Lagoana* of Melichar.

Type.—*I. respersionis* n. sp.

I. respersionis n. sp. S.A.M.

(Pl. VI, figs. 2 and 2*a*.)

The body above more or less dull ochraceous, spotted with dark brown and infused with pale red; the face and the pectoral regions dark brown, densely speckled with dull ochraceous; the apex of the head, the antero-lateral parts of the face, a transverse spot on the vertex in front of each eye, the antennae, a broad oblique fascia on each tegmen extending from the costal region to the inner claval vein, a broad oblique irregular subapical fascia on each side enclosing an ochraceous spot and extending from the costal margin to the apical margin, some spots on the veins in the two large apical oval ochraceous spots, the abdomen beneath, a transverse fascia on the posterior coxae and the legs dark brown to black; the anterior part and the posterior carinate margin of the vertex, the medial carina and some lateral spots on the pronotum, the medial carina, the basal part on each side of it and the apex on the mesonotum, the medio-lateral part and the apical ochraceous spots on the tegmina, the abdomen above (as far as can be seen in the specimen), the apex of the clypeus, the metasternum, the posterior coxae and trochanters in part, the apices and some spots on the abdominal segments beneath infused with red; the lateral parts of the face, the rostrum in part, the metasternum, the posterior coxae and trochanters, some small spots on the abdomen below, the ventral basal part of the genitalia (♂), a few small spots on the anterior and intermediate legs, the bases of the spines on the posterior tibiae and the apical parts of the first and second joints of the posterior tarsi ochraceous.

The vertex of the head about as long as the mesonotum ; the eyes projecting backwards, touching the pronotum ; pronotum narrow laterally, broader than the mesonotum ; the lateral carinae on the mesonotum feebly developed, oblique in position ; tegmina extending slightly beyond the abdomen, with the sides roughly parallel ; rostrum extending to the anterior margins of the posterior coxae.

Length of ♂ (incl. tegm.) about 4 mm.

Max. breadth of body acr. tegm. about 2 mm.

Hab.—Ovamboland—Mafa (M. Exp.).

Sub-fam. 4. **Cixiinae** (Stål) Dist.

Gen. OLIARUS Stål.

1862. Stål, Berl. Ent. Zeit., vi, p. 306.
1866. Stål, Hem. Afr., iv, pp. 164 and 166.
1906. Distant, Fauna Brit. Ind. Rhynch., iii, p. 256.
Triopsis (part) Signoret, Ann. Soc. Ent. Fr., p. 187, 1860.

Type.—*O. walkeri* Stål.

O. hottentottus Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 92 (*Cixius*).
1866. Stål, Hem. Afr., iv, p. 168.
1900–11. Distant, Ins. Trsvl., vol. i, p. 193, fig. 32.

Hab.—Damaraland—Gaub (M. Exp.).

O. lactescens n. sp. S.A.M.

(Pl. VII, fig. 2.)

The vertex of the head, the eyes, the pronotum, the mesonotum, the basal half and the subapical part of the claval suture, the spots on the veins of the clavi and tegmina, the veins on the apical area, the cross-veins, the costal margins, and the stigmatic areas on the tegmina, the lateral parts of face and clypeus below, and the pectoral regions dark brown to black ; the anterior and lateral margins of the vertex, the infusions round the cross-veins and the apical margins on the tegmina, the face and clypeus, the abdomen beneath (as far as can be seen in the carded specimen) and the legs paler brown, more brownish ochraceous; the posterior margin of the vertex, the anterior margin and carina on the pronotum, the medial and apical parts on the claval suture, the anterior margins of the stigmatic areas, the medial carina and the lateral margins on the face and clypeus, a spot on each side of the face, the rostrum, the margins of the prostethium, the apical margins of the abdominal segments below, the posterior coxae (as far as can be seen in specimen), the apices of the femora and tibiae, the margins of the sulcations on the tibiae and the posterior tarsi yellowish white to ochraceous; the five longitudinal carinae, the apex and the baso-lateral margins on the mesonotum reddish ochraceous; the tegmina and wings lactescent; the vertex slightly narrowed anteriorly.

This species is allied to *hottentottus* of Stål, from which it differs by being larger, by having more lactescent and less infuscated tegmina and by having the vertex very nearly as long as broad.

Length of specimen (incl. tegm.) about 8 mm.

Max. breadth of specimen (incl. tegm.) about 2$\frac{2}{3}$ mm.

Hab.—Ovamboland—Namakunde (M. Exp.).

O. limbifer n. sp. S.A.M.

(Pl. VII, fig. 4.)

Body above and below black; the margins of the vertex, the anterior and posterior margins on the pronotum, the costal margins, the veins on the clavi and tegmina, the outer parts of the stigmatic areas, the veins on the wings, the apical margins on the dorsal abdominal segments, the margins and the medial carina on the face and clypeus, the ocelli, the metasternum in part, the apical margins and apices of the abdominal segments below, the ventral surfaces of the male genitalia, the apices of the anterior and intermediate coxae, the posterior coxae and trochanters, the apices of the femora, the margins of the sulcations on the tibiae, the posterior tibiae (the longitudinal fasciae and the apices of their spines excepted) and the posterior tarsi ochraceous; the eyes (a central infusion excepted) and the carinae on the mesonotum reddish ochraceous; a spot in front of each coxae pale orange; tegmina very pale ochraceous, darker and slightly infuscated on the apical regions, with a spot on each side on the junction of the claval veins, a spot on the bifurcation of each cubital vein, some spots on the veins of the tegmina, the inner part of the stigmatic areas, the veins and cross-veins on the apical part and the apical margin dark brown; wings hyaline, opalescent, feebly lactescent, slightly darker apically, with the veins and margins dark brown on the apices.

The vertex about as long as broad, feebly narrowed anteriorly, with a medial, anteriorly abbreviated feeble carination; the inner pair of carinae on each side of the medial carina on the mesonotum slightly outwardly convex; tegmina and wings extending considerably beyond the abdomen; rostrum reaching the posterior coxae or extending slightly beyond them; ♂ slightly smaller than the ♀.

Length of ♂ (incl. tegm.) 5–5⅔ mm.
Length of ♀ (incl. tegm.) about 7 mm.
Breadth of ♂ 2–2½ mm.
Breadth of ♀ 2½ mm.
Hab.—Ovamboland—Mafa, Ongandjera (M. Exp.).

O. maculosus n. sp. S.A.M.

(Pl. VII, fig. 3.)

Body black above and below (as far as can be seen in the carded specimen); the margins of the vertex, the pronotum, the costal margins, the outer parts of the stigmatic areas, the veins of the clavi and tegmina, the lateral parts, the margins and the medial carina as well as an oblong spot on each side on the face, the apices of the femora and the tibiae (the sulcations excepted) dull ochraceous; the carinae on the mesonotum reddish brown; tegmina hyaline, feebly tinged with ochraceous, slightly darker, more infuscated on the apices, with the numerous small bead-like spots on the claval suture, on the costal margins and on the veins on both the tegmina and the clavi, an oblique fascia on the anterior part in front of the middle extending from the costal margin of each tegmen to the claval suture, an oblique infuscation on each side extending backwards from the claval apex to meet a subapical transverse fascia, the cross-veins, and the apical margins on the tegmina dark brown; the veins on the tegmina poorly setigerous.

The vertex of the head much longer than broad, narrowed anteriorly, with the margins prominently ridged and feebly medially carinate; posterior margin of the pronotum angularly sinuate; the medial and the outermost carinae on each side on the mesonotum distinct and straight, the innermost ones obsolete, converging slightly towards the apex. The distinctive characters of this small species is its elongated vertex, its poorly developed inner mesonotal carinae, and the numerous bead-like spots on the veins of the tegmina and clavi.

Length (incl. tegm.) about 4 mm.
Max. breadth acr. tegm. about $1\frac{1}{2}$ mm.
Hab.—Ovamboland—Namakunde (M. Exp.).

O. virgultivagus n. sp. S.A.M.

(Pl. VII, fig. 5.)

Body black above and below; the margins of the vertex, the posterior part of the eyes, the ocelli, the carinae and the posterior margin on the pronotum, the carinae on the mesonotum, the claval suture, the costal margins, the claval veins in part, and the outermost vein on the tegmina, the outer margins of the stigmatic areas, the veins on the wings, the lateral margins and medial carina on the face and clypeus, the metasternum (as far as can be seen in carded specimen), the apices and apical margins of the abdominal segments below, the extreme apices of the femora, the posterior tibiae and posterior tarsi whitish ochraceous; anterior and intermediate tibiae and tarsi brownish ochraceous; tegmina vitreous, milky, with the veins, cross-veins, the inner part of the stigmatic areas and the narrow apical margin dark brown; the apical veins of the wings dark brown.

The vertex of the head broad, much broader then long, narrowed and rounded anteriorly, with an abbreviated medial carina; pronotum well developed, with prominent carinae, posteriorly angularly sinuate; the outermost carinae on the mesonotum oblique and the innermost outwardly convex, converging anteriorly; posterior tibiae trispinose. Related to *O. moestus* Stål, but differing by the milky tegmina and non-infuscated wings.

Length of ♀ (incl. tegm.) about 5 mm., (excl. tegm.) 3 mm.
Breadth about 2 mm.
Hab.—Ovamboland—Namakunde (M. Exp.).

Gen. Duilius Stål.

1858. Stål, Oefv. Vet. Ak. Förh., p. 319.
1866. Stål, Hem. Afr., iv, p. 172.

Type.—*D. tenuis* Stål.

D. tenuis Stål.

1858. Stål, *loc. cit.*
1866. Stål, *loc. cit.*

Hab.—Damaraland—" Terr. fluv. Swakop " (after Stål).

Sub-fam. 5. **Tropiduchinae** (Stål) Dist.

* INKEWANA n. gen.

Body elliptical, slightly convex above; head, including eyes, narrower than pronotum; vertex broad, medially and marginally carinate, its anterior margin narrowed and rounded; the eyes large, oval, projecting posteriorly beyond the basal margin of vertex, nearly touching the pronotum; ocelli absent; second antennal joints oval, subglobular; face long, discally tricarinate and marginally carinate, broader posteriorly than anteriorly, anterior part feebly medially convex, with the carinae not quite reaching it; clypeus triangular, slightly convex, with the lateral margins noncarinate, medially basally feebly subcarinate, its basal part angularly sinuate; pronotum tricarinate, its posterior margin broadly angularly sinuate, its antero-lateral parts excavate for the reception of the eyes, discally medially bi-impressed; mesonotum triangular, tricarinate, narrower than the pronotum; tegmina coriaceous, elongately oval, rounded posteriorly and abbreviated; claval suture absent; clavus with two longitudinal (the outer meeting the inner just before the middle) and tegmen with four longitudinal elevated veins; the inner claval being continuous posteriorly, transversely and intramarginally with the lateral subcostal vein on the tegmen; wings absent; tibiae sulcated; posterior tibiae the longest and trispinose; posterior tarsi with the basal joint robust, moderately long; male genitalia prominent, with a dorsally situated tubular structure opening posteriorly, with a central spine-like projection attached to its inner dorsal surface and two apposed prominent ventral dilated flaps (Pl. VII, fig. 6*a*); female unknown.

This genus seems to be allied to *Hiracia.*

Type.—*I. fuscoirroratus* n. sp.

I. fuscoirroratus n. sp. S.A.M.

(Pl. VII, figs. 6 and 6*a*.)

Body above and below ochraceous; the tegmina with a feeble greenish tinge; a large subtriangular spot on the apex of the head (anterior part of the face), a smaller triangular spot on each side of the vertex near the anterior margin of the eye, a fascia behind each eye, extending anteriorly and laterally in front of the antennal insertion, the second antennal joints, the antero-lateral excavated parts on the pronotum, a spot on each side basally near the basal

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* Kaffir for a "little rogue."

angles and some small spots discally between the carinae on the mesonotum, the many small irregular and often dendritic markings between the veins on the tegmina, an obscure transverse fascia on the penultimate abdominal segment above, the lateral parts of the abdomen in front of the genital segment, a basal spot above on the tubular genital structure and the floor or ventral surface of the circular opening, the irregular markings between the carinae and the carinae on the face (obscurely so), the clypeus, especially laterally, the lateral parts on the metastethium, the basal, medial, ventral surface of the male genitalia, the anterior and intermediate legs, the lateral fasciae on the posterior femora, the inner surfaces and the apices of the spines on the posterior tibiae, the apices and spines on the first and second joints and the apical joint on the posterior tarsus blackish brown or black ; the medial basal part on the clypeus, the anterior or upper surfaces and apices of the anterior and intermediate femora, the margins of the sulcations on the tibiae, the anterior (upper) and under surfaces on the posterior femora, the bases of the spines on the posterior tibiae and the first and second joints of the posterior tarsi ochraceous.

The vertex broader than long, with the medial carina not reaching the apex ; lateral carinae on the mesonotum oblique, converging slightly anteriorly ; tegmina not extending beyond the penultimate abdominal segment, leaving the genitalia exposed ; abdomen obscurely medially carinate towards the apex on the dorsal surface ; the first or subbasal spine on the posterior tibia the smallest.

Length of ♂ 4 mm.

Breadth of body acr. tegm. about 2 mm.

Hab.—Ovamboland—Mafa (M. Exp.).

Sub-fam. 6. **Derbinae** (Stål) Dist.

* IMBALARA n. gen.

Head, including eyes, narrower than the pronotum, seen from the side more or less rounded anteriorly, compressed and narrowly prominent in front of the eyes ; vertex narrow, more so anteriorly, with its margins strongly carinately prominent, projecting above the eyes and continuous with the carinate margins on the face ; face very narrow, convexly rounded, its margins prominently carinate, producing a deep medial sulcation ; clypeus long, narrow, medially carinate, with its lateral margins subcarinate and its base straight ; eyes posteriorly sinuate beneath (" comma-shaped " when viewed from the side); ocelli present; antennae with an oval, thin squame or scale-like projecting appendage (Pl. VIII, figs. 1 and 1*a*, app.) on each side attached to their bases and with the second joint subglobular; apical joint of rostrum minute; pronotum short, posteriorly deeply angularly sinuate, medially and laterally carinate; mesonotum tricarinate, with the lateral margins ridged; tegmina elongate, longer than the wings, gradually amplified from base towards the apex, thence somewhat convex, but slightly indented in front of the somewhat amplified apex; five longitudinal veins emerging from the basal cell (of which the outermost or ulnar gives off inwardly four oblique longitudinal branches connected by cross-veins towards the margin); the subcostal vein bifurcating opposite the basal cell; the clavus somewhat long, nearly reaching the middle of the tegmen; wings shorter than tegmina, with the claval area coriaceous, with five longitudinal veins (the costal and the middle ones of which bifurcate); legs slender; posterior tibiae obsoletely bispinose; first joint of the posterior tarsi elongated; abdomen above medially longitudinally carinate.

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* Kaffir for a " champion."

This genus is allied to *Phenice*, from which it can be distinguished by the scale-like antennal appendages, the presence of ocelli and the different ground-plan of the venations on the tegmina and wings.

Type.—*I. squamifer* n. sp.

I. squamifer n. sp. S.A.M.

(Pl. VIII, figs. 1 and 1*a*.)

The vertex of the head, the pronotum, the carinae, and the apex on the mesonotum, the face, the clypeus, the ocelli, the second antennal joints, the rostrum, the coxae and legs ochraceous; the mesonotum, the abdomen above, the pectoral regions laterally, and the narrow apical margins of the abdominal segments below brownish ochraceous; the eyes, the apex of the rostrum, the lateral regions (often the dorsal surface) and the ventral surface of the abdomen, and the spines on the posterior tibiae and tarsi blackish brown; the scale-like appendages to the antennae, the carinae, the lateral and posterior margins on the pronotum yellowish white or albescent; tegmina brownishly infuscated, with a purplish tinge especially on the apex; the basal part on the clavus, the longitudinal veins emitted from the basal cell, the cross-veins and a subapical spot darker, purplish brown; the ulnar vein beyond the middle, the apical veins and the apical margin reddish; the basal costal margin, the basal part of the subcostal vein and the medial part on the clavus ochraceous;

four or five spots on the costal region (including a marked subapical one), two rows of oval spots along the cross-veins, the apical part of the basal cell, some irregular spots along the ulnar vein and the subapical part on the clavus whitish ; wings faintly infuscated, with the claval area and the veins dark purplish brown, the margin reddish.

The lateral carinae on the pronotum very oblique, parallel to the posterior margins ; mesonotum convex discally, with the carinae not reaching the rounded and somewhat raised apex ; rostrum reaching the posterior coxae ; posterior tibiae armed with two small obsolete spines, one at the base and the other a little beyond the middle ; abdomen pilose on its ventral surface.

Length of body (excl. tegm.) 4–4½ mm.
Breadth of abd. 1½–2 mm.
Length of tegm. about 7½ mm.
Hab.—Damaraland—Tsumeb (E. Köchig) ; also
Transvaal—Barberton (H. Munro).

Gen. CAMMA Dist.

1907. Distant, Ann. Mag. Nat. Hist., xix, p. 404.
Type.—*C. abdominalis* Dist.

C. abdominalis Dist. S.A.M.

1900–11. Distant, Ins. Trsvl., vol. i, p. 195, pl. xx, fig. 3*a* (*Phenice*).
Hab.—Ovamboland—Otjimbumbe, Kunene R. (M. Exp.).

Gen. INXWALA Dist.

1900–11. Distant, Ins. Trsvl., vol. i, p. 197.
Type.—*I. modesta* Dist.

* *I. modesta* Dist. S.A.M.

(Pl. VII, figs. 7, 7*a*, and 7*b*.)

1900–11. Distant, Ins. Trsvl., vol. i, p. 197, tab. xx, fig. 6*a*.
Hab.—Damaraland—Windhuk (Purch., 1919).
Ovamboland—Nomtele, Andoni, Ongandjera (M. Exp.).

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* The coloration varies in the specimens from these localities. The tegmina vary from pale greyish brown to blackish brown. The claval suture, the claval veins, the tegminal veins and some spots along the costal membrane and some minute or larger spots scattered over the surface are whitish. Distant does not mention that the inner claval vein is granular. The venation of the tegmina seems to be identical with that of *Phaconeura.*

Sub-fam. 7. **Lophopinae** (Stål, Atkins) Dist.

Gen. ELASMOSCELIS Spin.

1839. Spinola, Ann. Soc. Ent. Fr., viii, p. 388.
1866. Stål, Hem. Afr., iv, p. 200.
1906. Distant, Fauna Brit. Ind. Rhynch., iii, p. 318.
1915. Melichar, Ann. Mus. Nat. Hung., pt. xiii, p. 356.

Type.—*E. cimicoides* Spin.

E. stali Dist. S.A.M.

1910. Distant, Ins. Trsvl., p. 198, tab. xix, fig. 14, *a–b*.

cimicoides Stål (nec Spin.), Hem. Afr., iv, p. 200, 1866.

Hab.—Damaraland—Okahandja (Schultze), Gaub, Waterberg, Tsintsabis (M. Exp.).
Ovamboland—Omaramba (Eriksson).

Gen. KUSUMA Dist.

1906. Distant, Fauna Brit Ind. Rhynch., iii, p. 329.

Type.—*K. carinata* Dist.

K. aethiopica n. sp. S.A.M.

(Pl. VII, fig. 8.)

Body above and below pale greenish yellow to dilute ochraceous (fresh specimens are most likely green ?) ; the ocelli and abdomen above orange yellow ; the eyes reddish brown ; the apices of the spines on the posterior tibiae and the claws of the tarsi black ; tegmina pale greenish yellow, with the veins green ; wings milky white, with the veins pale green.

The vertex of the head broader than long, slightly produced in front of the eyes, somewhat concave discally, anteriorly subtruncately rounded, narrower than posteriorly, medially distinctly carinate and with the lateral margins upwardly carinate ; face marginally and medially carinate, slightly broader posteriorly ; clypeus with the sides obscurely ridged ; rostrum short, reaching the intermediate coxae ; pronotum prominently tricarinate, anteriorly subtruncately rounded, posteriorly deeply sinuate, with the disc slightly concave ; mesonotum about as long as the vertex and pronotum together, with the lateral carinae oblique, converging anteriorly; tegmina extending considerably beyond the abdomen, with the costal membrane on each side with about fourteen transverse veins; wings extending beyond the abdomen, shorter than the tegmina; posterior tibiae with two distinct spines.

This species is related to *K. carinata* Dist.

Length (incl. tegm.) about 8 mm.

Breadth acr. meso. about 2 mm.

Hab.—Ovamboland—Near Eriksson's Drift on Kunene R. (M. Exp.).

Sub-fam. 8. **Issinae** (Stål) Dist.

Gen. TELMESSUS Stål.

1866. Stål, Hem. Afr., iv, p. 211.
1906. Melichar, Abh. k. k. Zool. Bot. Ges. Wien., iii, 4, p. 157.

Type.—*T. fenestratus* Thb.

T. testudinarius Dist. S.A.M.

1900–11. Distant, Ins. Trsvl., vol. i, p. 199, tab. xix, fig. 15*a*.
Hab.—Ovamboland—Andoni, Otjimbumbe on Kunene R. (M. Exp.).

Gen. MONTEIRA Mel.

1906. Melichar, Abh. k. k. Zool. Bot. Ges. Wien., iii, 4, p. 158.

Type.—*M. cornicula* Mel.

M. cornicula Mel.

1906. Melichar, *loc. cit.*, fig. 24.
1900–11. Distant, Ins. Trsvl., vol. i, p. 199, tab. xx, fig. 7*a*.
Hab.—Damaraland (after Melichar).

*IKONZA n. gen.

Head, including eyes, broad, slightly broader than pronotum; vertex quadrangular, broader than long, slightly broader anteriorly than posteriorly, its margins carinate, medially obsoletely carinate, with its posterior margin slightly concave and its anterior margin broadly convexly rounded; face shield-like, broadly quadrangular, posteriorly slightly broader, medially discally quadrangularly feebly convex and faintly rugulose, the anterior margin slightly concave, medially and sublaterally very faintly indicative of carinae, the margins finely carinate; clypeus triangular, noncarinate (as far as can be seen on carded specimen); eyes large, oval, projecting backwards; ocelli none; second antennal joints short and oval; pronotum about as long as the vertex, medially carinate, with its margins carinate, its anterior margin subtriangularly produced and rounded, its posterior margin truncate; mesonotum triangular, with its lateral margins carinate; tegmina slightly ampliated posteriorly, placed slightly vertically, with the claval margin straight, with the costal margin just before the middle slightly convexly rounded, with the apical margin obliquely truncate, discally antero-laterally globularly elevated; the veins prominent, elevated, with many transverse veins from the middle towards the apex (some of which are obscurely visible); a distinct series of short apical veins deliminating a row of apical areas; wings slightly shorter than tegmina; legs moderately stout; tibiae distinctly sulcated; posterior tibiae bispinose.

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* Kaffir for a "varlet."

This genus seems to have affinities with *Hysteropterum*.

Type.—*I. lawrencei* n. sp.

* *I. lawrencei* n. sp. S.A.M.

(Pl. VIII, figs. 3, 3*a*, and 3*b*.)

Body above and below more or less sienna brown; the inner and posterior basal parts of the eyes above, the lateral or antennal regions below the eyes, the medial carina and an irregular and obscure spot on each side on the pronotum, the apex on the mesonotum, the abdomen below, the posterior coxal regions, a spot near the bases, a medial annulation and the apices on the anterior and intermediate tibiae and the posterior tibiae and tarsi paler, more ochraceous; the eyes, a depression on each side on the vertex near the basal angles, a depression medially as well as an obscure fascia on each side of the medial carina and the lateral parts on the pronotum, a smooth depression on each side and the lateral parts on the mesonotum, the anterior and intermediate legs, the fasciae on the upper surfaces on the posterior femora and tibiae, and the apices of the spines on the posterior tibiae blackish brown to black; tegmina tortoise-shell-like, shining black; the claval suture, the veins on the clavus, the veins and transverse veins on the tegmina brownish ochraceous; a large transverse spot and some small transverse fasciae on the clavus, a broad transverse fascia across the tegmina just before the middle and some irregular spots on the apical region ochraceous ; wings infuscated, with black longitudinal and transverse veins ; posterior tibiae with two distinct spines beyond the middle.

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* After Mr. R. F. Lawrence of the Museum staff, who was responsible for the collection of many Hemiptera from S.-W. Africa.

Length of body about 4 mm.

Breadth of body, pronotal region, about 2 mm.

Length of tegm. about 4⅓ mm.

Hab.—Ovamboland—Otjimbumbe on Kunene R. (M. Exp.).

Gen. HILDA Kirk.

1900. Kirkaldy, Entomologist, p. 243.

1900–11. Distant, Ins. Trsvl., vol. i, p. 206.

Isthmia Walker, List Hom., iii, p. 732, 1851 ; Stål, Hem. Afr., iv, p. 218, 1866.

Egropa Melichar, Hom. Faun. Ceyl., p. 82, 1903.

Type.—*H. undata* Walk.

H. patruelis Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 100 (*Tettigometra*).

1866. Stål, Hem. Afr., iv, p. 219.

1900–11. Distant, Ins. Trsvl., vol. i, p. 201, tab. xx, fig. 12*a*.

Hab.—Ovamboland—Mafa (M. Exp.).

H. speciosa n. sp. S.A.M.

(Pl. VIII, fig. 4.)

The vertex of the head, the antennae and pronotum pale brownish ; the anterior margin of the head, a medial fascia and some irregular spots on the vertex, the basal part of the clypeus, the posterior margin and some irregular spots on the pronotum, a small lateral spot on each side on the mesonotum, some irregular spots on the pectoral regions, the apical margins on the abdominal segments below, the numerous small spots on the legs and the posterior tarsi whitish or whitish ochraceous ; the face, the abdomen below, the numerous irregular spots on the legs, the bases of the tarsal joints, the claws of the tarsi and the apices of the spines on the posterior tarsi black ; the mesonotum deep velvety blackish brown, with an obscure brownish spot on each side near the basal angles ; its apex pale brownish ochraceous ; tegmina opaque, more or less shining basally, black near the base, slightly paler, more brownish ochraceous towards the apex ; a small oblong oblique spot at about the middle and the apex on the clavus, a broad subbasal oblique fascia, a transverse fascia touching the costal margin, thinned medially and extending to the apex of the clavus, a large oblique subapical spot touching the costal margin and some small irregular apical spots on each tegmen white; an arcuate subapical fascia spotted with black across the clavi and extending on to the tegmina brownish ochraceous; wings milky or albescent, with white veins.

This species is related to *patruelis*, but differs by having the anterior margin of the head more truncately rounded and less convexly rounded, by its apparently smaller size and dark-coloured tegmina with distinct and well-defined white markings.

Length (incl. tegm.) about $3\frac{2}{3}$ mm.
Breadth acr. mesonotal region about $1\frac{1}{3}$ mm.
Breadth acr. base of tegm. about $1\frac{1}{2}$ mm.
Hab.—Ovamboland—Namakunde (M. Exp.).

Sub-fam. 9. **Ricaniinae** (Stål) Dist.

(=Fam. **RICANIIDAE** Mel.)

Div. 1. RICANIINARIA Dist.

(=Tribe RICANIINI Mel.)

Gen. Lugardia Dist.

1909. Distant, Ann. Mag. Nat. Hist., iv, p. 331.
1923. Melichar, Gen. Ins. Hom., fasc. 182, p. 147.

Type.—*L. mimica* Dist.

L. mimica Dist. S.A.M.

1909. Distant, Ann. Mag. Nat. Hist., iv, p. 332.
1900–11. Distant, Ins. Trsvl., vol. i, p. 247, tab. xxiii, fig. 24*a*.
Hab.—Damaraland—Tsumeb (M. Exp.).

Div. 2. NOGODINIARIA Dist.

(=Tribe NOGODININI Mel.)

* Diazanus n. gen.

Head, including eyes, slightly narrower than pronotum; vertex much broader than long, somewhat concavely depressed, with the margins carinate, with the posterior margin broadly concave and the anterior margin truncate; face slightly longer than broad, feebly convex (when viewed from the side), medially distinctly carinate, with indications of lateral or obsolete lateral carinae parallel to the medial one, the margins carinate, the anterior margin concave; clypeus about as long as face, with the lateral margins carinate, medially apically distinctly carinate, the base slightly concave; ocelli present; second antennal joints globular; pronotum medially obsoletely carinate, with the margins carinate, with the anterior margin concavely rounded and the posterior margin broadly subangularly sinuate; mesonotum about as long as the vertex and pronotum together, tricarinate, the lateral carinations incurved, meeting near the anterior margin, the lateral margins ridged; tegmina parchment-like, elongately oval, with the costal membrane broad and convex anteriorly; the costal margin slightly sinuate before the stigmatic areas; the apical areas slightly ampliated, with the apical margin subtruncately rounded; a globular elevation present near basal cell; the claval veins uniting at the middle; the basal cell emitting four longitudinal veins, the second one of which bifurcating before the middle and the others beyond the middle; the outermost or radialis dividing into two slightly thickened branches, the inner one of which curving gracefully inwards, then outwards, joining the costal margin, the outer forming the posterior boundary of the stigmatic area (the two being joined by a transverse vein forming a distinct cell); costal membrane with numerous oblique cross-veins; clavus and tegmen with numerous variable cross-veins, and three arcuate ridge-like series, extending from the claval apex to the stigmatic region, more or less in rows, dividing the apical region into three rows of apical cells; wings with the longitudinal veins furcate near the apex, with only two cross-veins beyond the middle and with the longitudinal vein on the anal area unforked; anterior and intermediate femora sulcate below, with two rows of small spines situated mostly on the outer rim; posterior tibiae with two or three spines; anterior and intermediate tibiae sulcated above.

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* After Bartholomew Diaz.

Type.—*D. coriipennis* n. sp.

D. coriipennis n. sp. S.A.M.

(Pl. VIII, figs. 2, 2*a*, and 2*b*.)

The vertex of the head, the anterior and posterior parts on the face, the posterior lateral parts and a transverse fascia on the clypeus, the antennae, the apex of the rostrum (often the entire rostrum), the pronotum, the mesonotum, the prostethium, the lateral regions of the abdomen below, the anterior coxae in part, the irregular markings on the anterior and intermediate femora and tibiae, the fasciae on the posterior femora and tibiae, and the apices of the spines on the posterior tibiae and tarsi black ; a medial fascia and some lateral spots (or a lateral fascia) on the vertex, a broad transverse fascia across the face (often obscure), the posterior angles on the face, the ocelli, the rostrum, a medial fascia, a lateral fascia on each side and some irregular markings on the pronotum, the dorsal surface of the abdomen, the metastethial or posterior coxal regions, the ventral surface and the apical margins laterally on the abdominal segments below, and the legs more or less ochraceous ; the carinae and often the disc between the carinae as well as a small spot on each side, or some small spots between the carinae and the apex on the mesonotum brownish ochraceous ; the clypeus ochraceous or inclining to orange ; tegmina opaque, ochraceous or dull ochraceous, with the veins, the cross-veins (except the three series near the apex), a medial oblique spot and the apex on the clavus, the basal globular elevation, the base, a spot opposite the globular elevation and the margin on the costal membrane, the stigmatic area, the cell on the radialis, an oblique fascia near the claval apex, two oblique fasciae on the apical veins near the apical angle, the apical margin, and the small round spots scattered over the tegmina (especially on the cells of the apical regions and costal membrane) blackish brown or black ; some spots at the apices of the transverse veins on the costal membrane and on the apices of the apical veins along the apical margin pale ochraceous ; wings smoky, with dark-brown veins.

The vertex about half as long as the pronotum, with its lateral margins often prominently upwardly carinate (causing the anterior margin of the face to be markedly concave) ; the disc of the pronotum somewhat concave ; the lateral carinae on the mesonotum slightly oblique ; rostrum reaching the posterior coxae ; posterior tibiae bispinose, often trispinose (with a very minute spine before the middle and two large ones beyond the middle).

Length of body (incl. tegm.) 6–7½ mm.

Length of tegm. 5–6½ mm.

Breadth acr. mesonotal region 1⅔–2 mm.

Hab.—Damaraland—Windhuk (Purch.), Nuragas and Sandup (M. Exp.), Otjiwarongo (J. S. Brown).

Ovamboland—Mafa, Nomtele (M. Exp.).

Sub-fam. 10. **Flatinae** (Stål) Dist.

(=Fam. **FLATIDAE** Mel.)

Div. 1. FLATARIA Dist.

Gen. SCARPANTA Stål.

1862. Stål, Rio Jan. Hem., vol. ii, p. 69.
1866. Stål, Hem. Afr., iv, p. 240.
1901. Melichar, Ann. Nat. Mus. Wien., xvi, p. 240.
1923. Melichar, Gen. Ins. Hom., fasc. 182, p. 36.

Type.—*S. mortuifolia* Stål.

S. fulva n. sp. S.A.M.

(Pl. VIII, figs. 5 and 5*a*.)

The vertex, the face, the bases of the ocelli, the pronotum, the mesonotum, the lateral pectoral regions and the anterior coxae (as far as can be seen in the carded specimen) more or less shining, deep blackish brown ; the basal margin on the eyes, the lateral antennal regions, the antennae, the ocelli, the carinate margins on the face, the posterior part on the face, the clypeus and the legs (as far as can be seen) paler, more ochraceous ; tegmina opaque, yellowish brown ; the anterior granular region along the inner claval vein, the basal cell and basal region, the posterior region near the apical angle, some faint spots on the apical cells intramarginally beyond the stigmatic regions and along the apical margins, and about eleven or twelve distinct round spots on each tegmen (Pl. VIII, fig. 5*a*) blackish brown or black ; the inner anterior part on the clavus, the costal and apical margins, the veins on and near the stigmatic regions, and the terminations of the veins on the posterior costal and apical margins ochraceous ; the entire body partially covered with a whitish powder, especially on the reticulate regions on the tegmina.

The face anteriorly convexly rounded, posteriorly discally slightly concave, with the lateral margins posteriorly prominently carinate ; pronotum with the anterior margin convexly subtruncately rounded, finely carinate, the posterior margin broadly subangularly sinuate ; mesonotum convexly roundly elevated, with the central discal part flat and deliminated posteriorly on each side by a carina, with the apex slightly elevated ; tegmina with the costal margin slightly convex, with the apical angle rounded, the apical margin more or less truncate and the sutural angle acute, more or less produced; the costal membrane broad anteriorly, narrower posteriorly, with transverse veins; posterior part of tegmen (from about the level of the claval apex) with the veins reticulate, with more or less three series of cross-veins near the apex, dividing that region into three rows of apical cells; clavus tubercularly granular anteriorly along the prominently elevated inner longitudinal vein.

Length (incl. tegm.) about 8½ mm.
Breadth acr. meso. about 2⅓ mm.
Length of tegm. about 7½ mm.
Hab.—Ovamboland—Onoolonga (M. Exp.).

Div. 2. NEPHESARIA Dist.

Gen. Caesonia Stål.

1866. Stål, Hem. Afr., iv, p. 244.
1901. Melichar, Ann. Nat. Mus. Wien., xvi, p. 254.
1923. Melichar, Gen. Ins. Hom., fasc. 182, p. 56.

Type.—*C. bellula* Stål.

C. bellula Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 94 (*Colobesthes*).
1866. Stål, Hem. Afr., iv, p. 244.
1901. Melichar, Ann. Nat. Mus. Wien., xvi, p. 258, pl. v, fig. 13.
Hab.—Ovamboland—Near Eriksson's Drift on Kunene R. (M. Exp.).

Gen. Ulundia Dist.

1900–11. Distant, Ins. Trsvl., vol. i, p. 250.

Type.—*U. decisa* Dist.

U. decisa Dist. S.A.M.

1900–11. Distant, *loc. cit.*, tab. xxiii, fig. 1*a*.
Hab.—Damaraland—Nuragas, Windhuk (M. Exp.).
Ovamboland—Near Eriksson's Drift on Kunene R. (M. Exp.).

Div. 3. SELIZARIA Dist.

Gen. Cyarda Walk.

1858. Walker, List Hom. Suppl., p. 121.
1866. Stål, Hem., iv, p. 237.

1902. Melichar, Ann. Nat. Mus. Wien., xvii, p. 133.
1923. Melichar, Gen. Ins. Hom., fasc. 182, p. 91.
Gelastophantia Kirk., Entomologist, p. 279, 1904.

Type.—*C. difformis* Walk.

C. ocreata n. sp. S.A.M.

(Pl. VIII, figs. 9 and 9*a*.)

The vertex, the anterior and lateral intramarginal parts on the face, the lateral and apical parts on the clypeus, the pronotum, the mesonotum, the mesostethia, the abdomen below, the posterior trochanters, the upper surfaces on the anterior and intermediate tibiae, the claws of the tarsi, the apices on the posterior tibiae, and the posterior tarsi blackish brown or black ; a medial fascia (sometimes absent), the lateral carinate margins and some lateral markings on the vertex, the posterior part and the lateral carinate margins on the face, the medial basal part on the clypeus, the rostrum, the lateral antennal regions, the apices on the second antennal joints, the ocelli, an obscure medial fascia, the anterior margin and an antero-lateral irregular spot on each side on the pronotum, an obscure abbreviated medial fascia on the anterior part, the basal part of the lateral margins and often a spot on each side near the apex on the mesonotum, the prostethia, the metastethial or posterior coxal regions, the apical margins on the abdominal segments below, the coxae and the legs more or less ochraceous or dull brownish ochraceous ; tegmina pale yellowish white, pale brownish ochraceous or pale brownish ; the veins and transverse veins, an oblique fascia joining the outer claval vein to the inner opposite the mesonotal apex, a spot on the junction of the inner and outer claval veins, the axillary tubercle, a broad fascia extending from the costal margin and behind the axillary tubercle obliquely backwards, some small marginal spots on the costal membrane, an irregular spot at about the middle near the costal margin, a broad lateral fascia extending from about the level of the claval apex to the apical margin, the posterior costal part beyond the stigmatic regions and the apical angle, black ; the anterior granular region on the clavus and the parts posterior to the claval apex along the suture castaneous or piceous ; wings brownishly infuscated, more ochraceous near the bases and darker towards the apices, with the basal parts on the veins and the margins ochraceous, with the apical parts on the veins blackish brown.

The vertex about as long as broad, with some discal depressions, with the lateral margins carinate, the anterior margin somewhat convexly rounded and ridge-like ; face anteriorly convex, posteriorly discally slightly concave, with the lateral margins prominently carinate and somewhat reflected outwards ; clypeus triangular, basally slightly convex ; rostrum reaching the posterior coxae ; pronotum about as long as the vertex, with its anterior ridged margin subtruncately rounded, anteriorly medially slightly sinuate, with its posterior margin broadly subangularly sinuate, with a small mamillary tubercle behind each eye ; mesonotum convexly elevated, prominently so anteriorly, flattened discally and posteriorly ; tegmina with the costal margin very convex opposite the axillary tubercle, slightly sinuate before the stigmatic regions, posteriorly slightly amplified, with the apical angles rounded, with the apical margin more or less truncate (but slightly concavely sinuate), with the prominent sutural angles subangularly rounded ; axillary tubercles prominent, produced outwards ; clavus tubercularly granular anteriorly, with the inner vein thickened and elevated, with the outer vein joining the inner at about the middle ; anterior and intermediate tibiae dorso-ventrally compressed, broad and flat on their superior surfaces ; posterior tibiae slightly ampliated apically, with a single subapical spine.

Length (incl. tegm.) 9–11 mm.

Breadth acr. axillary tubercles $2\frac{1}{3}$–3 mm.

Breadth acr. mesonotal region $2\frac{1}{4}$–2 mm.

Hab.—Namaqualand—Asab, Kalkfontein, Gibeon (J. Brown).
Damaraland—Omaruru (J. Brown), Tsumeb (M. Exp.).

C. truncata n. sp. S.A.M.

(Pl. VIII, figs. 8 and 8*a*.)

The body above and below ochraceous ; a spot on each side on the vertex, an intramarginal line (often absent) surrounding the face, the clypeus in part, a spot or two spots on each side laterally in front of the eye, a few small spots on each side on the pronotum, the mesonotum and the claws of the tarsi reddish brown; the base on the face, the apex of the rostrum, the bases of the ocelli, a medial depressed line on the pronotum, three broad longitudinal fascia (sometimes obscure) on the mesonotum, the narrow basal margins of the abdominal segments above, the mesostethia, the anterior and intermediate coxae, and the spines on the posterior tibiae and tarsi darker, more blackish brown; tegmina more or less ochraceous, with the basal granular part and the two veins on the clavus, the basal part, the basal costal part, the costal membrane and most of the longitudinal veins and transverse veins on the tegmina darker, more reddish brown; the costal margin and the vein across the axillary elevation pale ochraceous; wings milky white basally, darkly infuscated apically, with the veins pale ochraceous basally, black apically.

The head, including the eyes, slightly broader than the pronotum, more or less truncately rounded anteriorly; the vertex short, considerably broader than long, with the margins carinate; face convex anteriorly, slightly depressed posteriorly, about as broad as long, with the lateral margins prominently carinate posteriorly and somewhat reflexed outwards; clypeus slightly convex; rostrum reaching the posterior coxae; pronotum with its anterior carinate margin broadly convexly rounded, with its posterior margin broadly sinuate; mesonotum about twice as long as the pronotum and head together, more or less convex, centrally and posteriorly slightly depressed; tegmina with the axillary tubercle subprominent, with the apical margin truncately rounded, with the second longitudinal vein dividing and subdividing into numerous branches, with a subbranch of the first longitudinal vein crossing the branches of the second, with numerous transverse veins; clavus with the outer vein meeting the inner beyond the middle; posterior tibiae bispinose.

Length (incl. tegm.) 10–12 mm.

Breadth acr. mesonotal region $2\frac{1}{4}$–$2\frac{1}{2}$ mm.

Hab.—Namaqualand—Kalkfontein (J. Brown), near Gamis (M. Exp.), Asab (J. Brown).

Sub-fam. 11. **Delphacinae** (Stål) Dist.

Gen. LIBURNIA Stål.

1866. Stål, Hem. Afr., iv, p. 179.
1906. Distant, Fauna Brit. Ind. Rhynch., iii, p. 480.
Embolophora Stål, Oefv. Vet. Ak. Förh., p. 265, 1853.

Type.—*L. monoceros* Stål.

L. lautipes Stål. S.A.M.

1858. Stål, Oefv. Vet. Ak. Förh., p. 319 (*Delphax*).
1866. Stål, Hem. Afr., iv, p. 180.

Hab.—Damaraland—T'kons Fountain (after Stål).
Ovamboland—Andoni, Mafa, Ongandjera (M. Exp.).

L. manicata n. sp. S.A.M.

(Pl. VIII, fig. 7.)

Body above and below pale brownish ochraceous; the clypeus, the rostrum, the lateral carinae on the pronotum, the carinae and the apex on the mesonotum, the apical margins and apical angles on the abdominal segments above, the posterior coxal or metastethial regions, the medial ventral surface on the abdomen, the coxae and the posterior legs slightly paler, more ochraceous; the eyes, the ocelli, the apex of the rostrum, the apices of the first antennal joints, a spot on each side on the metastethium, the basal margins and the lateral parts on the abdomen below, the apices of the spines on the posterior tibiae and tarsi, and the claws of the tarsi black; tegmina vitreous, slightly tinged with ochraceous, with the veins granular anterior to the claval apex, with the apices of the inner veins on the clavus, some of the longitudinal veins and granulations, the longitudinal apical and cross-veins on the apical region posterior to the claval apex, a longitudinal fascia on each side along the suture posterior to the claval apex, infusions round the termini on the apical veins, and the posterior margin blackish brown; the veins on the wings blackish brown.

The vertex on the head about as wide as the eyes, with the lateral margins carinate; face elongate, slightly narrowed anteriorly, medially and marginally carinate, the medial carina bifurcating anteriorly into two long forks; clypeus medially and laterally carinate; eyes slightly sinuate on their ventral margins; the second antennal joints slightly longer than the first; rostrum extending slightly beyond the intermediate coxae; pronotum tricarinate, with its lateral carinae oblique and converging slightly anteriorly, with its posterior margin broadly sinuate; mesonotum tricarinate, with the space between the carinae slightly depressed posteriorly; the outer claval vein meeting the inner just before the middle; posterior tibiae bispinose.

Length (incl. tegm.) about 5 mm.
Breadth acr. meso. about 1 mm.
Breadth acr. tegm. about 1⅓ mm.

Hab.—Ovamboland—Near Eriksson's Drift on Kunene R. (M. Exp.).

L. varia n. sp. S.A.M.

(Pl. VII, fig. 9.)

Body above varying from ochraceous to pale brownish ochraceous, below varying more or less from pale brownish ochraceous to black; the carina and carinate margins on the face and clypeus, the carinae on the pronotum and mesonotum, the apex on the mesonotum, the apical margins and the apical angles on the abdominal segments above, often the apices on the posterior femora, the posterior tibiae and tarsi pale, more whitish ochraceous; the eyes, the ocelli, the space between the carina on the face and clypeus, the apex of the rostrum, the apices of the first antennal joints, the granulations on the second joints, the abdomen above, often the entire pectoral regions below, a distinct spot (surrounded by an ochraceous margin) on each side on the metastethium, a small spot on each side on the apices of the posterior femora, often the coxae, the apices of the spines on the posterior tibiae and tarsi, and the claws of the tarsi black; tegmina hyaline or vitreous, with a very faint tinge of ochraceous, with the veins and the costal margin anterior to the claval apex ochraceous, with the apices of the inner claval veins, the transverse and longitudinal apical veins as well as the posterior margin dark blackish brown; wings opalescent, faintly albescent, with the basal part of the veins ochraceous, and with the apical veins as well as the posterior margin dark brown; the veins on the tegmina granular and often setigerous; the outer claval vein meeting the inner before the middle of the clavus.

The vertex narrower than the eyes, slightly concave discally; face elongate, slightly narrower anteriorly, medially and marginally carinate, the medial carina bifurcating anteriorly into two short forks; clypeus medially and marginally distinctly carinate; rostrum extending slightly beyond the intermediate coxae; eyes excavated on their ventral surfaces; pronotum and mesonotum tricarinate; posterior tibiae bispinose.

Length of ♂ (incl. tegm.) 3–3½ mm., ♀ average about 4 mm.

Breadth acr. mesonotal region, ♂ and ♀ about 1 mm.

Hab.—Ovamboland—Andoni, Ongandjera, Ondongua, Onambeke, Onoolonga, Ukualongkathi (M. Exp.).
Natal—Durban.

L. vitticollis Stål. S.A.M.

1855. Stål, Oefv. Vet. Ak. Förh., p. 93 (*Delphax*).
1866. Stål, Hem. Afr., iv, p. 179.

Hab.—Ovamboland—Onambeke (M. Exp.).

Fam. **MEMBRACIDAE** Germ.

Sub-fam. **Membracinae** (Stål) Fowler.

Div. OXYRHACHISARIA Dist.

Gen. Oxyrhachis Germ.

1835. Germar, Silberm. Rev. Ent., iii, p. 232.
1846. Fairmaire, Ann. Soc. Ent. Fr., p. 267.
1866. Stål, Hem. Afr., iv, p. 84.
1907. Distant, Fauna Brit. Ind., iv, p. 3.

Polocentrus Buckton, Monogr. Memb., p. 253, 1903.
Ouranorthus Buckton, Tr. Linn. Soc. Lond., ix, p. 333, 1905.

Type.—*O. tarandus* Fabr.

O. tarandus Fabr. S.A.M.

1798. Fabricius, Ent. Syst. Suppl., p. 514 (*Membracis*).
1803. Fabricius, Syst. Rhyng., p. 19 (*Centrotus*).
1835. Germar, Silberm. Rev., iii, p. 232.
1866. Stål, Hem. Afr., iv, p. 84.
1907. Distant, Fauna Brit. Ind., iv, p. 4.

rufus Buckton, Monogr. Memb., p. 254, t. lviii, fig. 2, *a* and *b*, 1903 (*Polocentrus*).
neuter Buckton, *ibid.*, fig. 3, 1903 (*Polocentrus*).
Hab.—Ovamboland—Omaramba (Eriksson).
Deutsch-Südwestafrika (after Lindt).

Gen. Xiphistes Stål.

1866. Stål, Hem. Afr., iv, pp. 83 and 85.
1869. Stål, Oefv. Vet. Ak. Förh., p. 280.
1907. Distant, Fauna Brit. Ind. Rhynch., iv, p. 8.

Type.—*X. furcicornis* Germ.

X. sulcicornis Thb. S.A.M.

1822. Thunberg, Hem. Rostr., cap. i, p. 4 (*Centrotus*).
1866. Stål, Hem. Afr., iv, p. 85.
1900–11. Distant, Ins. Trsvl., vol. i, p. 211, 1908.

parallela Walker, List Hom., ii, p. 508, 1851 (*Oxyrhachis*).

pallidus Buckton, Monogr. Memb., p. 227, t. 1, fig. 5, 1903 (*Daunus*).
Hab.—Damaraland—Otjituo (M. Exp.).

Fam. **CERCOPIDAE** (Leach) Atkins.

Sub-fam. 1. **Aphrophorinae** (Stål) Dist.

Gen. Poophilus Stål.

1866. Stål, Hem. Afr., iv, p. 72.
1907. Distant, Fauna Brit. Ind., iv, p. 86.
1913. Lallemand, Gen. Ins., fasc. 143, p. 28.

Type.—*P. actuosus* Stål.

P. adustus Walk. S.A.M.

1851. Walker, List Hom., iii, p. 710.
1913. Lallemand, Gen. Ins., fasc. 143, p. 29, pl. i, fig. 10*a*.

Hab.—Damaraland—Nuragas (M. Exp.).

P. costalis Walk. S.A.M.

1851. Walker, List Hom., iii, p. 707 (*Ptyelus*).
1862. Stål, Oefv. Vet. Ak. Förh., p. 493.
1907. Distant, Fauna Brit. Ind., vol. iv, p. 86.
1908. Distant, Ins. Trsvl., vol. ix, p. 222, pl. xxi, fig. 1*a*.

concolor Walker, List Hom., iii, p. 715, 1851 (*Ptyelus*).
dolosus Walker, List Hom. Suppl., p. 189, 1858 (*Ptyelus*).
,, Stål, Oefv. Vet. Ak. Förh., p. 493, 1862.
immutatus Walker, J. Linn. Soc. Zool. Lond., i, p. 96, 1857 (*Ptyelus*).
rotundatus Signoret, Thom. Arch. Ent., ii, p. 332, 1858 (*Ptyelus*).
natalensis Stål, Hem. Afr., iv, p. 74, 1866.
Hab.—Damaraland—Otjituo (M. Exp.).
Ovamboland—Namakunde, Mafa (M. Exp.).

P. terrenus Walk. S.A.M.

1851. Walker, List Hom., iii, p. 709 (*Ptyelus*).
1908. Distant, Ins. Trsvl., vol. ix, p. 222, pl. xxi, fig. 4*a*.

umbrosus Stål, Oefv. Vet. Ak. Förh., xii, p. 97, 1855 (*Ptyelus*).
,, Stål, Hem. Afr., iv, p. 74, 1866.
Hab.—Damaraland—Gaub (M. Exp.).

Gen. CLOVIA Stål.

1866. Stål, Hem. Afr., iv, pp. 68 and 75.
1907. Distant, Fauna Brit. Ind., iv, p. 93.
1913. Lallemand, Gen. Ins., fasc. 143, p. 42.

Type.—*C. bigoti* Sign.

C. callifera Stål. S.A.M.

1856. Stål, Oefv. Vet. Ak. Förh., xiii, p. 199 (*Ptyelus*).
1866. Stål, Hem. Afr., iv, p. 77.
1903. Jacobi, Zool. Jahrb., 19, (6), p. 777, pl. xliv, fig. 15*a*.
1908. Distant, Ins. Trsvl., vol. ix, p. 222, pl. xxii, fig. 7*a*.

planaris Walker, List Hom., Suppl., p. 190, 1858 (*Ptyelus*).
Hab.—Damaraland—Nuragas (M. Exp.).

C. centralis Dist. S.A.M.

1908. Distant, Ins. Trsvl., vol. ix, p. 223, pl. xxii, fig. 8*a*.

Hab.—Damaraland—Gaub (M. Exp.).

Gen. SEPULLIA Stål.

1866. Stål, Hem. Afr., iv, p. 79.
1913. Lallemand, Gen. Ins. Cercop., fasc. 143, p. 27.

Type.—*S. murrayi* Sign.

S. peregrina n. sp. S.A.M.

(Pl. VIII, figs. 6 and 6*a*.)

The body above brownish ochraceous, with a slight reddish tinge; the body below (as far as can be seen in carded specimens) brownish ochraceous; the metastethial regions, the bases of the spines and the tarsi on the posterior legs more or less ochraceous; a small basal spot on each side of the vertex, the eyes in part, the anterior lateral margins on the face, the lateral regions of the head on each side below the lobes of the vertex and the eyes, a large transverse fascia on each side behind the eyes, the posterior lateral angles and some narrow, interrupted, transverse, discal markings on the pronotum, the basal parts, the basal half of the lateral margins and a transverse mark at about the middle on the scutellum, the lateral pectoral regions below, the fasciae on the anterior lateral surfaces on the femora, the posterior lateral surfaces on the femora and tibiae, the irregular spots and the apices of the spines on the posterior tibiae and tarsi black ; tegmina more or less ochraceous, with a spot opposite the bifurcation of the longitudinal vein near the costal margin, and the apical areas slightly paler, with the punctuations, the basal part on the clavus, the basal costal region, an infusion near the base of the discal cell, a small callous spot on the apex of the clavus, and another larger, oval, more elevated one opposite the claval apex nearer the costal margin, the longitudinal veins on the apical area, and a posterior intramarginal line black ; head, pronotum, and scutellum sparsely, and the tegmina densely punctuated.

The head about half as long as the pronotum, with the anterior margin somewhat produced and convexly rounded ; rostrum extending slightly beyond the intermediate coxae ; pronotum broader than long, discally slightly convex, with the anterior margin slightly produced and convexly rounded, with its posterior margin concave to the scutellum ; scutellum about as long as broad (or very slightly longer than broad), discally slightly depressed, with its apex acute ; tegmina with the costal margin slightly sinuate opposite the bifurcation of the longitudinal veins, with the posterior margin rounded ; posterior tibiae with two spines (a subbasal one and a strong, prominent medial one).

Length (incl. tegm.) $3\frac{1}{2}$–4 mm.
Breadth acr. pron. $1\frac{1}{2}$–$1\frac{3}{4}$ mm.
Hab.—Damaraland—Otjituo (M. Exp.).

Sub-fam. 2. **Cercopinae** (Stål) Fowler.

Gen. Locris Stål.

1866. Stål, Hem. Afr., iv, pp. 56 and 57.
1908. Distant, Ins. Trsvl., vol. ix, p. 227.
1913. Lallemand, Gen. Ins. Cercop., fasc. 143, p. 84.

Type.—*L. rubra* Fabr.

L. areata Walk. S.A.M.

1851. Walker, List Hom., iii, p. 675 (*Monecphora*).
1866. Stål, Hem. Afr., iv, p. 59.
1908. Distant, Ins. Trsvl., vol. ix, p. 228, pl. xx, fig. 19*a*.

Hab.—Ovamboland—Okavango R. and Omaramba (coll. Eriksson).

L. arithmetica Walk. S.A.M.

1851. Walker, List Hom., iii, p. 675 (*Monecphora*).
1866. Stål, Hem. Afr., iv, p. 58.
1908. Distant, Ins. Trsvl., vol. ix, p. 227, pl. xx, fig. 18*a*.

Hab.—Damaraland—Otjituo, Sandup, Namutoni, Waterberg (M. Exp.), Omaruru (Seewald), Okahandja (Peters).
Ovamboland—Omaramba (coll. Eriksson).

L. concinna Dist. S.A.M.

1893. Distant, Ent. Month. Mag., xxix, p. 182.

Hab.—Damaraland (after Distant).
Ovamboland—Okavango R., Otjimbora (coll. Eriksson).

EXPLANATION OF PLATES.

Plate I.

FIG.
1. *Coptosoma rufiplaga* n. sp.
2. *Lactistes falcipes* n. sp.
2*a*. ,, ,, Anterior tibia.
2*b*. ,, ,, Orifice of odoriferous gland.
3. *Bolbocoris parmatus* n. sp.
4. *Veterna imitatrix* n. sp.
5. *Dismegistus rufomarginatus* n. sp.
6. *Cydnus hirsutus* n. sp.
7. *Aeliomorpha petulca* n. sp.
8. ,, *semiviridis* n. sp.
9. *Eysarcoris nigripectus* n. sp.

Plate II.

1. *Paraphlegyas pallidus* n. gen. et n. sp.
2. *Uhlunga typica* Dist. n. var. *cornuta*.
3. *Schizops otjimbora* n. sp.
4. *Cletus respersus* n. sp.
5. *Homoeocerus tigrinus* n. sp.
6. ,, *trabeatus* n. sp.
7. *Geocoris tenuatus* n. sp.

Plate III.

1. *Stenozygum sanguineiventris* n. sp.
2. *Cletus spicatus* n. sp.
3. *Agraphopus australis* n. sp.
4. *Blissus cornipes* n. sp.
5. *Paraphlegyas elegans* n. gen. et n. sp.
6. *Dermatinus tartareus* Stål. Winged ♀.
7. *Migdilybs furcifer* n. gen. et n. sp. Forma typica.
7*a*. ,, ,, Lateral view of head and pronotum.
8. *Pamera pullata* n. sp.

Plate IV.

1. *Neolethaeus aethiopicus* n. sp.
2. *Paraphlegyas namakundensis* n. sp.
3. *Aderrhis pulla* Bergr.
3*a* & 3*b*. ,, ,, Anterior leg.
4. *Mafa lanceolata* n. gen. et n. sp.
5. *Tinna serratifemora* n. sp.
5*a*. ,, ,, Lateral view of head, pronotum, and anterior leg.
6. *Oncocephalus clavipes* n. sp.
7. *Reduvius bitumineus* n. sp.

Plate V.

FIG.
1. *Reduvius nigricephalus* n. sp.
2. ,, *rasipodus* n. sp.
3. *Glymmatophora venustiterga* n. sp.
4. *Harapactor otjimbumbensis* n. sp.
5. ,, *pilipectus* n. sp.
6. *Igora repraesentatus* n. gen. et n. sp.
6*a*. ,, ,, Lateral view of head, pronotum, and anterior leg.
7. *Tritavus saxatilis* n. gen. et n. sp.
7*a*. ,, ,, ♀ genitalia.
7*b*. ,, ,, Eggs.

Plate VI.

1. *Araneaster granulosa* n. gen. et n. sp.
1*a*.* ,, ,, ♀ genitalia.
1*b*. ,, ,, Anterior coxa, showing nodular structure.
2. *Itandela respersionis* n. gen. et n. sp.
2*a*. ,, ,, Face and clypeus.
3. *Munza venusta* n. sp.
4. *Zouga apiana* n. sp.
5. *Abagazara omaruruensis* n. sp.

Plate VII.

1. *Metoponitys testudineus* n. sp.
1*a*. ,, ,, Tegmen, showing venation
2. *Oliarus lactescens* n. sp
3. ,, *maculosus* n. sp.
4. ,, *limbifer* n. sp.
5. ,, *virgultivagus* n. sp.
6. *Inkewana fuscoirroratus* n. gen. et n. sp.
6*a*. ,, ,, Face and clypeus.
7. *Inxwala modesta* Dist.
7*a*. ,, ,, Face and clypeus.
7*b*. ,, ,, Right tegmen, showing venation.
8. *Kusuma aethiopica* n. sp.
9. *Liburnia varia* n. sp.

Plate VIII.

1. *Imbalara squamifer* n. gen. et n. sp.
1*a*. ,, ,, Face and clypeus.
2. *Diazanus coriipennis* n. gen. et n. sp.
2*a*. ,, ,, Face and clypeus.
2*b*. ,, ,, Right tegmen, showing venation.
3. *Ikonza lawrencei* n. gen. et n. sp.
3*a*. ,, ,, Face.
3*b*. ,, ,, Left tegmen, showing venation.

* In Pl. VI, 1*a* is upside down, the top being ventral and the bottom dorsal.

FIG.		
4.	*Hilda speciosa* n. sp.	
5.	*Scarpanta fulva* n. sp.	
5*a*.	,, ,,	Left tegmen, showing venation.
6.	*Sepullia peregrina* n. sp.	
6*a*.	,, ,,	Right tegmen.
7.	*Liburnia manicata* n. sp.	
8.	*Cyarda truncata* n. sp.	Head, pronotum, and scutellum.
8*a*.	,, ,,	Left tegmen.
9.	,, *ocreata* n. sp.	
9*a*.	,, ,,	Right tegmen.

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OF THE

SOUTH AFRICAN MUSEUM

VOLUME XXIII.

PART II, *containing*:—

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(With 23 Text-figures.)

Appendix.

Several additions to our list have been made since the publication of the Monograph composing Vol. XIV of these Annals. There are also a few minor corrections and some misprints in the first two parts which need rectification. In the following pages these addenda and corrigenda will be arranged in their proper order according to the pagination and the sequence of the Tribes.

I have recently had the whole of the Haviland collection, now in the Natal Museum, submitted to me for examination by Dr. E. Warren, Director of that Museum. The collection is preserved in spirits and contains specimens (paratypes) of most of the species which were sent to Dr. Forel for determination. An examination of this material has brought to light a few novelties, and has enabled me to add further remarks on some of Forel's species.

PONERINAE.

Tribe CERAPACHYINI.

Cerapachys Peringueyi, Emery, var. latiuscula.

Also found at George, Knysna district, (Brauns).

Cerapachys Arnoldi, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 211, ☿, 1914.

☿, 3·5 mm. Colour similar to that of *Peringueyi*, but a little paler and more reddish; the tarsi dark ochreous, the antennae yellowish brown (not ferruginous as in *Peringueyi*), the club ochreous. Smooth and shining. Puncturation like that of *Peringueyi* on the head and thorax, but the punctures smaller and shallower. The puncturation of the petiole and abdomen much more sparse and more feeble than in *Peringueyi*; the petiole more strongly punctured than the 1st abdominal segment, the latter only slightly more strongly punctured than the rest of the abdomen. The scapes more strongly punctured than in *Peringueyi.* Pilosity shorter and less abundant than in *Peringueyi.* Head slightly longer than wide, relatively narrower behind than in *Peringueyi,* with the sides more convex, the posterior angles much more prominent, and the posterior margin more deeply emarginate. The vertex of the head is more convex. The scape is longer, extending to, or a little beyond the middle of the head; 2nd–9th joints of the flagellum twice as wide as long (less than twice in *Peringueyi*). The ventral lamella produced in its anterior half, the projection ending in a sharp angle or tooth behind (in *Peringueyi* the posterior end of the projection forms a wide and obtuse angle).

Habitat——? Cape Province. (Ex S.A.M. coll.)

(S.A.M., G.A. colls.)

Var. HEWITTI, n. var.

☿, 3 mm. Colour as in *Peringueyi.* Similar to the type of *Arnoldi* but smaller, and differing from it in the following characters. The hairs on the body are more abundant, especially on the petiole and abdomen. The thorax is shorter, the head (measured from the apex of the clypeus to the occipital margin) being a little longer than the thorax (measured from anterior margin to the brow of the declivity); in the type, the thorax is slightly longer than the head. The 1st segment of the abdomen is nearly as wide in front as behind (distinctly narrower in front than behind in the type).

Grahamstown, (Hewitt). Type in my collection.

C. ROBERTI, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 212, ☿, 1914.

☿, 3·5 mm. Castaneous red. Smooth and shining. Head and abdomen very finely and sparsely punctured. Thorax and petiole more coarsely and more closely punctured; a median longitudinal area on the thorax almost impunctate. Pilosity yellowish, thin, short, and scanty, becoming almost a pubescence in parts. Head one-fifth longer than wide, widest in the middle, the sides distinctly convex, the hind margin concave, the posterior angles rounded but very prominent, curved outwards and continued underneath the hind margin of the head as prominent elongate lobes or carinae. Mandibles oblong, as wide at the base as at the masticatory margin, which is feebly concave. Frontal carinae close together and short. Genal carinae very distinct. Eyes composed of a single facet, placed in the middle of the sides. Antennae 12-jointed; antennal fossae deep. The scape extends back beyond the middle of the head, the 2nd–9th joints of the flagellum are wider than long, the 10th as long as wide, the apical joint fairly narrow, very little more than twice as long as wide, as long as the 7th–10th together. Promesonotal suture distinct; the pronotum in front, and the declivity of the epinotum sharply marginate. Pronotum as long as wide, one-quarter shorter than the rest of the thorax. The latter is narrowed behind the promesonotal suture, widens out again at about the posterior fourth, and thence narrowed again towards the brow of the declivity, which is nearly vertical. The anterior face of the petiole is vertical and has its sides marginate. The petiole is moderately convex above and behind, feebly so at the sides, a little longer than wide, as wide in front as behind; the ventral lamella produced at its base into a large, rectangular and semitransparent lobe. The 1st abdominal segment is two-fifths wider than the petiole, a little wider at the apical margin than at the base, distinctly longer than wide, narrower than the 2nd segment, the ventral portion projecting forwards at the base. Second segment a little longer than wide.

Allied to *wroughtoni* but much larger, the promesonotal suture much deeper, the posterior angles of the head more prominent.

The key to the species of the ☿☿ of Cerapachys, should be altered as follows.

(4) 1. Eyes absent or composed of a single facet; reddish yellow species.
(1b) 1a. Larger species, 3·5 mm.; posterior angles of the head very prominent and curved distinctly outwards. . . . *Roberti*, Forel.
(1a) 1b. Smaller species, less than 3 mm.; posterior angles of the head less prominent, not markedly curved outwards.

(7) 8. Body castaneous brown, not very shining, more closely punctured, pubescence and pilosity rather abundant.
(10) 9. 2nd–9th joints of the flagellum twice as wide as long; projection of ventral lamella of petiole ending in an acute angle behind. *Arnoldi*, Forel.
(9) 10. 2nd–9th joints of the flagellum less than twice as wide as long; projection of ventral lamella ending in an obtuse angle behind. *Peringueyi*, Emery.

PHYRACACES COXALIS, n. sp.

☿, 2·8 mm. Black; mandibles, antennae, bases and apices of the femora, tibiae and tarsi brownish yellow, the middle of all the tibiae somewhat darker. Petiole and 1st abdominal segment moderately, the rest of the body very shining. Pilosity whitish, short, decumbent and very sparse on the head and thorax, more abundant on the petiole and abdomen, the apical half of the latter with longer and exserted hairs. Antennae and tarsi sparsely pubescent. Posterior half of the head and all the thorax sparsely punctured; the punctures on the thorax fairly coarse, larger than those on the head. Dorsal face of the petiole and the 1st abdominal segment fairly closely punctate and coriaceous, the posterior fifth of the latter more sparsely punctured. Basal half of the 2nd abdominal segment finely and evenly punctured. Scape and flagellum finely punctured, mandibles edentate, sparsely and rather coarsely punctured. A patch between the eyes and antennal sockets very finely coriaceous. The rest smooth and impunctate.

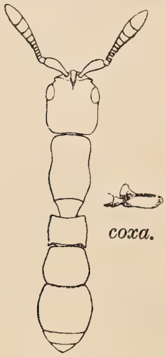

FIG. 60.
P. coxalis, n. sp.

Head subquadrate, one-seventh longer than wide, the sides and posterior margin very feebly convex, the posterior angles widely rounded. Clypeus and frontal carinae as in *P. Cooperi*, Arnold. The genal angles in front of the eyes more acute and directed more upwards than in that species. The scapes are much more abruptly incrassate than in *Cooperi* and are hardly three times as long as their greatest width, barely extending back as far as the hind margin of the eyes. First joint of flagellum as long as wide, the 2nd–8th much wider than long, the 9th one-third wider than long, the last joint half as long again as the 10th. The eyes occupy one-fourth of the sides of the head and are placed just in front of the middle. Dorsum of thorax sharply margined in front and behind, narrowed gradually towards the anterior third, thence ampliated and widest at the posterior third; about three-fifths longer than wide. The thorax is convex lengthwise and rises gradually from front to back. The declivity is very smooth and shining, steep, feebly margined at the sides. Petiole not quite one-third wider than long, anterior and lateral faces vertical, the anterior also concave transversely, the posterior face convex from above to below and vertical. The dorsal face is moderately convex, sharply marginate at the sides (which are feebly arcuate), and moderately marginate and concave in front; the posterior angles end in blunt teeth which are about as long as their basal width The ventral lamella of the petiole is produced in front into a large triangular tooth. Abdomen deeply constricted between the 1st and 2nd segments. The 1st is narrowest at the base, a trifle wider than long, and half as long again as the petiole, its sides convex. The 2nd segment is slightly wider and longer than the 1st, and a little longer than wide. The coxae of the posterior pair of legs bear behind, internally, a lamelliform and bluntly triangular process, which is as high as it is wide at the base. This structure is also visible in *Cooperi*, but in that species it is thicker and relatively shorter.

Sawmills, Umgusa River, S.R. Several ☿☿ taken running about on sandy soil and in hot sunshine. Quite distinct from and much smaller than *P. Cooperi* and *P. Braunsi*.

(S.A.M., R.M., G.A. colls. Type in my collection.)

Tribe PLATYTHYREINI.

Platythyrea schultzei, Forel. Also taken at the Victoria Falls and Bulawayo.

♂, (hitherto undescribed), 8 mm. Black; mandibles, legs and scapes reddish ochreous; flagellum reddish brown; the first two joints and apices of the remaining joints paler. Sculpture and pubescence as in the ☿, but the punctures are very shining and larger, particularly on the 1st abdominal segment; the punctures on the dorsum of the epinotum and on the petiole very large and deep. Head subcircular, about as wide as long, widest across the eyes, the posterior margin straight. Mandibles large, triangular, acute at the apex. Eyes large, oblique, occupying more than half the sides of the head. Antennae filiform, thick, extending back to the brow of the declivity of the epinotum; the scape short, not reaching the lateral margin of the head, about as long as the 2nd joint of the flagellum; the 1st joint wider than long, very short, hardly one-third the length of the 2nd joint, all the remaining joints at least twice as long as wide. Frontal carinae parallel, well developed, almost reaching back to the level of the posterior margin of the eyes. Ocelli not large, convex. Pronotum convex in front; mesonotum rather convex lengthwise, a little wider than long; scutellum rounded posteriorly, well above the level of the epinotum. Metanotum pointed or tuberculate in the middle. Dorsum of epinotum widest at the base, three times wider at the base than it is long in the middle, much wider than long; the declivity vertical, concave from above to below, the margins sharply defined. Petiole similar to that of the ☿, but more convex above and a little narrower in front; the posterior margin only feebly tuberculate at the lateral angles, not dentate as in the ☿. The ventral lamella is produced at the extreme base into a long, thin spine, pointing downwards and blunt at the apex. Abdominal constriction fairly strong; the 1st segment as long as the 2nd. Wings with the nervures and stigma pale brown, the apical half smoky.

Bulawayo, taken with the ☿☿. In my collection.

PLATYTHYREA MOCQUERYSI, Emery, var. MATOPOENSIS, Arnold.

♂, (hitherto undescribed), 6 mm. Black; antennae and legs reddish brown, the tarsi paler, mandibles dark castaneous. Sculpture and pubescence as in the ☿, but the punctures are larger and deeper, especially on the epinotum and abdomen; the epinotum is also finely coriaceous. Head subquadrate, slightly narrowed behind, the posterior margin straight, the sides feebly convex, the posterior angles rounded. Eyes large, occupying the anterior half of the sides of the head; ocelli small. Mandibles large, triangular, the masticatory margin feebly denticulate. Anterior margin of clypeus convex. Frontal carinae slightly divergent behind, not reaching the level of the middle of the eyes, not so distinct as in *Schultzei.* Antennae filiform, extending back to about the middle of the mesonotum; scape short, very little longer than the 2nd joint of the flagellum; the 1st joint as long as wide and half as long as the 2nd, the remaining joints all about one and a half times as long as wide. Pronotum three times as wide as long, widest behind; the promesonotal suture arcuate. Mesonotum a little wider than long, the anterior Mayrian furrows fairly distinct (very feeble in *Schultzei*). Dorsum of epinotum about two and a half times as wide across the base as it is long in the middle. It has a median longitudinal sulcus or row of punctures, and the posterior angles are prominent and subdentate; the declivity is vertical, submarginate at the sides. Seen from above, the junction of the two faces forms a sharp and concave edge. The petiole is shorter than in the ☿, little more than one-quarter longer than wide, distinctly narrower in front than behind, convex above and at the sides, the anterior face vertical, rounded above at its junction with the dorsal surface. The ventral lamella of the petiole produced in front into a rounded and more or less triangular projection. First abdominal segment one-third shorter than the 2nd, (as long as the 2nd in *Schultzei*). Inner margin of posterior coxae subdentate.

Essexvale, S. Rhodesia; taken at light. Although not captured in company with the ☿, it is undoubtedly referable to this species on account of its general structure, sculpture and size. In my collection.

PLATYTHYREA ARNOLDI, Forel.

♀, (hitherto undescribed), 13 mm. Sides of pronotum a little straighter than in the ☿, but the segment is as large and of the same shape as in the ☿. Mesonotum one-fourth wider than long; the scutellum (excluding the paraptera) pentagonal. Dorsum of epinotum one-third wider at the base than long, very little wider there than at the apex; less abundantly punctured than in the ☿. Wings dark brown, rather short, (anterior wing 7 mm. long), nervures and stigma almost black. Otherwise exactly like the ☿.

♂, (hitherto undescribed), 10–10·5 mm. Head a trifle wider than long; a little narrower in front of the eyes than behind them, the posterior margin feebly convex. The eyes occupy a little more than the middle third of the sides. Clypeus as in the ☿. Mandibles bright ferruginous, subopaque, the apex subacute, the masticatory margin edentate and concave. The scapes are three times as long as the 1st joint of the flagellum. Pronotum three and a half times wider than long in the middle. Mesonotum nearly as long as wide, sparsely but strongly punctured in the middle. Scutellum very convex transversely, as high as the mesonotum and much higher than the dorsum of the epinotum. The latter and the petiole are very strongly and abundantly punctured, much more so than in the ☿ and ♀. The dorsum of the epinotum is more narrowed towards the apex than in the ♀, unarmed, but with the apical margin slightly raised. Petiole a little shorter than in the ♀ or ☿. Wings almost hyaline in the basal half, fuscous brown in the apical half, the nervures pale brown, the stigma black. Otherwise like the ♀.

Hillside, Bulawayo, ♀ and ♂, with ☿☿; also taken at Victoria Falls. In both instances the nest resembled the one found at Shiloh, being surrounded exclusively with the remains of beetles. Types of ♀ and ♂ in my collection.

TRIBE PROCERATIINI (pp. 159 and 33).

GENUS DISCOTHYREA, Roger

D. OCULATA, Emery.

Ann. Soc. Ent. Belg., vol. 45, p. 52, ☿, ♀, ♂, 1901.

"☿ and ♀. Dark ferruginous, dull, mandibles, antennae, tarsi and abdomen paler; densely punctured with numerous and not deep little pits; covered with a velvety whitish pubescence; a small and oblique hair exserted from each puncture, larger than those of the pubescence, but hardly longer. Mandibles finely denticulate; the clypeus, fused with the frontal carinae, forms a subrectangular lobe in front; the frontal carinae are longer than half the head, and together form a projection which is flat on top, with abrupt margins; it starts in an acute angle in front, widens towards the third of its length, and then narrows and gradually descends posteriorly. Eyes fairly large, with large convex facets (at least 30 in the ☿). Ocelli present in the ♀. Antennae 9-jointed. Thorax without sutures in the ☿, the epinotum obtusely angulated on each side of the brow of the declivity, the latter concave. In the ♀, the angles of the epinotum are more prominent. Petiole hemispherical, the posterior face of which is feebly concave and opposed to the 1st abdominal segment, but only about half its surface is articulated to that segment. First abdominal segment as long as the thorax; separated by a well-marked constriction from the 2nd segment, which is shorter; the remaining segments very narrow. Wings yellowish with pale nervures. ☿ 2·5 mm., ♀ 3 mm.

♂, 2·5 mm. Black, dull, sculpture as in the ♀; mandibles, scapes and legs brown, flagellum, tibiae and tarsi whitish; genital armature yellowish; wings colourless, with very pale nervures. Head globose, mandibles triangular, well developed; clypeus, as in the ☿, fused with the frontal carinae which are united to form a single median carina. Antennae 13-jointed; scape as long as the three following joints taken together, 2nd joint very short, globose, the following joints longer than wide. Thorax short, rounded. Petiole as in the ♀, 1st abdominal segment not much larger than the 2nd, the abdomen less abruptly anteflexed below than in the ♀. Subgenital plate simple; cerci well developed; genital armature only partly retractile, stipes large. Wings with 1 closed cubital cell, the 2nd hardly indicated, no recurrent nervure.

Cameroons (Conradt)."

This species has to be added to our list on the evidence of a ♀, taken by myself in the Rain Forest, Victoria Falls, which agrees in every particular with the above description except the puncturation. The punctures in this specimen may be described as deep, being nearly as deep as they are wide. In my collection.

D. Traegaordhi, Santschi.

Göteborgs K. Vetensk. och Vitterh. Handl., vol. 15, 2, p. 3, ☿, 1914.

"☿, 1·5 mm. Testaceous red, upper surface of head and thorax and anterior half of abdomen brownish. Mandibles, antennae and tarsi testaceous yellow. Third to 7th joints of antennae slightly brownish.

Pubescence very fine and abundant. Erect pilose hairs absent; dull. Densely and finely punctured. Head distinctly longer than wide, narrowed in front, the posterior margin rounded, the sides nearly straight. Eye composed of 5 or 6 facets, placed in the anterior third of the sides. Antennae with 8 (9) joints, the 5th and 6th fused together. The scape, dilated at the apex, reaches the middle of the head; 2nd and 3rd joints of flagellum twice as wide as long, indistinct, the following joints increasingly wider. The last joint very large, ovoid, about two-thirds longer than wide. Frontal carinae completely fused into a single foliaceous plate, forming a raised triangular lobe, with the summit rounded in profile, and not extending beyond the anterior third of the head. Anterior margin of the clypeus transverse in its median fourth. Mandibles punctured, feebly denticulate behind, with a concave masticatory margin which ends in front in a strong triangular tooth. Thorax raised, feebly convex, dorsal surface flat, submarginate and without sutures. Declivity truncate, marginate and subdentate. Petiole about three times as wide as long, rounded above, very convex in front, with a large tooth below."

Pietermaritzburg, Natal (Traegaordh).

TRIBE PONERINI.

CENTROMYRMEX CONSTANCIAE, Arnold.

In the opinion of Dr. Forel, to whom I sent specimens of this species, the name must be sunk as a synonym of *C. sellaris*, Mayr, (Ent. Tidskr., p. 230, 1896). On the other hand, Dr. Santschi is of the opinion that the forms are distinct. Not having seen the type of *sellaris*, I am unable to pronounce any opinion on the subject myself.

Recently Dr. Santschi described as a new species (*C. Arnoldi*, Rev. Zool. Afr. 6, p. 229, 1919) some specimens of *Constanciae* which I had collected in the Amatongas Forest, P.E.A. In a later paper he admits that it is at the best only a slight variety of *Constanciae*. (Ann. S. E. Belg., vol. 60, p. 8, 1920.) For my part, I fail to detect any difference between these specimens and the type of *Constanciae*. The ♂ of the latter has been briefly described by Santschi under the name of *Arnoldi*. The following is a more detailed description.

♂, (hitherto undescribed), 5–5·3 mm. Black; the base of the abdominal segments narrowly dark brown, legs brown, tarsi pale yellowish brown, antennae brown and becoming brownish yellow towards the apex, the 1st joint of the flagellum brownish yellow; shining. Legs and antennae pubescent, the pubescence on the latter decumbent and shorter than on the legs. Whole body clothed with a short, erect, coarse, and black pilosity, intermixed here and there with some longer and finer hairs ; on the abdomen the coarser pilosity is less abundant.

Head coarsely punctured on the vertex and frons, also finely striate, transversely so above, more or less longitudinally on the clypeus. Pronotum closely and finely punctured, the mesonotum more closely punctured, the punctures becoming larger and deeper towards the posterior margin, also finely and transversely rugose in the middle over its posterior third. Scutellum longitudinally striolate. Epinotum and petiole smooth, abdomen sparsely and finely punctured. Head, seen from above, a little more than twice as wide as long ; seen from in front, transversely oval and about one-fourth wider than high ; seen from the side, thicker anteriorly. The eyes occupy the anterior half of the sides. Mandibles elongate triangular, small, not meeting when closed. Clypeus trapezoidal, as long as wide in front, the anterior margin straight. The scapes are barely one-fourth longer than wide, two-fifths longer than the 1st joint of the flagellum, which is barely longer than wide, all the remaining joints longer than wide, the 3rd–7th joints subequal. Ocelli not raised.

Pronotum narrowly exposed above, slightly flattened and horizontal at its posterior margin. Mesonotum as long as wide, not very convex, longitudinally impressed in the middle over its posterior half, the forks of the Mayrian furrows distinct only in front. Scutellum gibbous, triangular, rounded behind. Dorsum of epinotum convex transversely, slightly so and oblique lengthwise, twice as wide as long, merging by a short curve into the longer and vertical declivity. Petiole like that of the ☿, but wider, its dorsal edge much shorter, (*i.e.*, thinner above), armed below with a sharp spine as in the ☿. Abdomen three times longer than wide, widest behind the middle. Wings smoky, strongly iridescent, nervures and stigma dark brown ; 2 cubital, 1 discoidal and a closed radial cell present.

Amatongas Forest, P.E.A.

Nesting in the decayed wood of a fallen tree, a fairly large colony, consisting of about 5 dozen ☿☿ and as many ♂♂.

STREBLOGNATHUS AETHIOPICUS, Smith.

Also taken at Port Elizabeth and Grahamstown, (Brauns) ; Durban, (Marley) ; Maletsumgane Falls, Basutoland, (R. M. Sloley).

Page 54, line 11, for " genus " read sub-genus.

PACHYCONDYLA STRIGULOSA, Emery.

Also taken in Natal, (Wroughton and Haviland).

PACHYCONDYLA GRANOSA, Roger.

Also taken at Victoria Falls, (Peringuey); Knysna, Cape Prov., (Brauns).

♂, (hitherto undescribed), 12 mm. Head and scutellum black, promesonotum ferruginous, the rest of the body and the legs and antennae ochreous. Pilosity yellowish, very sparse, absent from the thorax. Pubescence yellowish, short, decumbent and fairly abundant all over. Head moderately shining between the eyes and sparsely punctured, dull and coriaceous posteriorly. The body shining, very superficially rugulose on the mesonotum and epinotum, exceedingly finely and sparsely punctured elsewhere, the metanotum dull and rugoso-punctate.

Head two and a half times wider than long, one-third longer than high, the eyes very large and occupying the anterior two-thirds of the sides. Clypeus carinate in the middle. Mandibles small and dull. The scapes are about twice as long as the 1st joint of the flagellum, which is one-fourth longer than wide. The apex of the antenna reaches back as far as the base of the 2nd abdominal segment. Pronotum very narrowly exposed above. Mesonotum very convex transversely and lengthwise, about one-third wider than long. Scutellum convex and gibbous, higher than the mesonotum, subtriangular when seen from above, the sides subvertical. Dorsum of epinotum as long as the subvertical declivity; the junction of the two faces widely angular, the apex of the angle rounded. Petiole as long as high, a trifle widened posteriorly, two-thirds as long again as wide; the dorsal face convex, the anterior and posterior faces subvertical, feebly convex from side to side; the anterior face twice as long as the posterior. Abdomen elongate, narrow at the base, widened gradually towards the posterior third, thence narrowed again to the apex. Wings slightly smoky, nervures yellowish brown, stigma brown.

Majuba Nek, Cape Prov., taken with the ☿☿, (Hewitt). Type in my collection.

PACHYCONDYLA (ECTOMOMYRMEX) BRUNOI, Forel.

♀, (hitherto undescribed), 5·3 mm. Pronotum two and a third times wider than long, its anterior face steeper than in the ☿. Dorsum of epinotum long, as long as the pronotum, twice as wide at its base as long; the declivity vertical, longer than the dorsum. Petiole wider and thinner above than in the ☿. Otherwise similar to the ☿.

PACHYCONDYLA KRUEGERI, Forel, race ASINA, Santschi.

Ann. Soc. Ent. Belg., vol. 56, p. 153, ☿, 1912.

This race has been recorded by Santschi as occurring in Natal, (leg. *Traegaordh*).

It differs from the type of the species in having the dorsal profile of the thorax less arched, the dorsal surface of the node flatter, the 2nd abdominal segment wider, wider than long, and the abdominal constriction stronger.

EUPONERA CAFFRARIA, Smith.

Port Elizabeth, Lichtenburg—Transvaal, Bothaville—Orange Free State, but not occurring at Willowmore, (Brauns).

EUPONERA HAVILANDI, Forel, and PERINGUEYI, Emery

In my remarks on the first of these two species, I pointed out that if the unknown ♂ of *Peringueyi* should eventually prove to be similar to that of *Havilandi*, it might be necessary to separate those two species from the rest of the genus *Euponera*, under the subgenus *Hagensia*, or to re-erect that as a distinct genus. Prof. Emery has expressed the opinion, (*in litt.*), with which I agree, that the presence of toothed claws in the ☿ and ♂ should be sufficient grounds for such separation. It is true that the ♂ of *Havilandi* resembles that of *caffraria*, *e.g.* in the possession of the spined pygidium and closed radial cell, but the structure of the claws in both sexes, the shape of the petiole in the ♂, and the marginate pronotum, the mandibular fovea and the large size of the ☿☿ of both species, justify the erection of a genus distinct from Euponera. These two species are therefore to be placed under the new genus *Hagensia*, characterised as follows :—

Genus HAGENSIA, Forel (Arnold emend.).

Characters.

☿. Claws with a distinct tooth. Middle and hind tibiae with two calcaria, the outer small, the inner large and pectinate. Mandibles with the masticatory margin long, beset with alternatingly large and small teeth, and with a transverse or oblique elongate fovea near the base. Cheeks without carinae. Scape cylindrical. Thoracic sutures distinct. Pronotum margined laterally. Node of petiole truncate behind, the junction of the anterior and posterior faces forming a sharp edge. Abdomen truncate at the base and sloping forwards ; the 1st segment with a distinct tooth below at the base.

♂. Antennae 13-jointed, long and filiform; the scape short, shorter than the 3rd joint of the flagellum, the 1st joint shorter than the scape. Mandibles edentate, oblong and very small. Frontal carinae obsolete. Pronotum very little exposed above; Mayrian furrows not defined. Epinotum very bluntly bituberculate. Petiole long, much longer than wide, the node feeble. Pygidium spined. Middle and hind tibiae with two calcaria. Claws with a small tooth. Radial cell closed.

Type of genus, HAGENSIA HAVILANDI Forel.

The key to the genera on page 37 should be altered as follows.

(11) 10. Claws with a ☿☿ single tooth.
(10b) 10a. Pronotum not margined . . . *Megaponera,* Mayr.
(10a) 10b. Pronotum margined . . . . . *Hagensia,* Forel.

♂♂

(4) 7. Scape considerably shorter than the 2nd joint of the flagellum.
(7b) 7a. Claws toothed . . . . . . *Hagensia,* Forel.
(7a) 7b. Claws simple.

On page 69 I pointed out that the Natal forms differed from those taken at King William's Town. The examination of further material, including specimens which were taken at Durban and which agree entirely with Forel's description, has enabled me to clear up the confusion and to recognise the existence of two races of the type species.

HAGENSIA HAVILANDI, Forel, race GODFREYI, n. r.

☿, 13 mm. Larger than the type of the species from Natal. Moderately shining all over; very finely and evenly punctured, the spaces between the punctures smooth, not reticulate and shagreened as in the type of the species. Mandibles smooth and shining, the fovea near the base much deeper and wider. The longitudinal depression at the summit of the declivity of the epinotum is much deeper and ends more abruptly. The declivity is also narrower than in the type of the species. The sides of the head are more convex, and the head is shorter or only one-eighth to one-ninth longer than wide (one-fifth in the type of the species). Otherwise like the type of the species. Pirie, King William's Town, (Rev. R. Godfrey); Grahamstown, (Hewitt and Cherry). Type of ☿ in my collection. Type of ♂ in the S.A.M. coll.; this is the ♂ described on pp. 68–69.

HAGENSIA HAVILANDI, race MARLEYI, n. r.

☿, 13·6 mm. This differs from both the type of the species and race *Godfreyi* by its more robust build and by its sculpture, which consists of a very dense, regular, microscopic, and reticulate puncturation on the head, and thorax, similar but less dense on the abdomen. The latter has a sparse and very shallow puncturation superimposed. The whole body, excepting the base of the abdomen, is entirely dull. Pubescence much finer and shorter than in the type species, forming only a microscopic down. Mandibles as in the type of the species, but with the foveae deeper and more transverse in direction. The anterior margin of the clypeus lacks the obtuse angle or tubercle which is present in the type, and the suture which separates the clypeus from the rest of the head is shining and deeply impressed (shallow in the type of the species). The frontal carinae are not elongated behind like an eyebrow as in the type of the species. The frontal sulcus is much deeper and ends abruptly in front and behind. The pronotum is widest in front, and wider than in the type species, very sharply marginate all round, the margin projecting slightly over the vertical sides. Mesonotum wider than long (about as long as wide in the type). Dorsum of epinotum wider and flatter, the declivity more sharply margined, very little higher than wide below (nearly two-thirds higher than wide below in the type), not longitudinally impressed at its summit. The posterior face of the scale lacks the slight tubercle below the apex which is present in the type of the species.

Eshowe, Zululand, (H. B. Marley). Type in my collection.

EUPONERA WROUGHTONI, Forel.

♀, (hitherto undescribed), 7 mm. Sculpture as in the ☿, but a little stronger on the abdomen. The yellowish pubescence is much more abundant. The mesonotum is almost flat above ; the dorsum of the epinotum short and oblique, its junction with the declivity rounded ; the declivity vertical in its lower half, slanting forwards in its upper half. Petiole like that of the ☿, but wider and much thinner above. Wings brownish yellow, nervures and stigma dark brown. Otherwise like the ☿.

Estcourt, Natal, (R. C. Wroughton). In my collection.

PONERA DULCIS, Forel.

Page 82, four lines from the bottom of the page, ☿ should be altered to ♀.

PONERA SULCATINASIS, Santschi.

Göteborgs K. Vetens. och Vitterh. Handl., vol. 15, 2, p. 4, ☿, ♀, 1914.

" ☿, 3·5–3·8 mm. Black, mandibles, antennae, tarsi and anus testaceous red ; dull. Upper surface of pronotum, petiole and 1st abdominal segment slightly shining. Densely and finely punctured. An abundant whitish pubescence all over. A few fine, erect, pilose hairs round the mouth and on the abdomen. Head one-sixth longer than wide, sides fairly convex, the posterior angles a little rounded, posterior margin straight, distinctly wider behind than in front. Eyes composed of 3–5 facets, placed at the anterior third of the sides of the head. Anterior border of clypeus emarginate at the sides, in the middle produced into a blunt angle, with a strong median carina which is longitudinally impressed along its anterior third, appearing almost bicarinate. Mandibles subopaque, microscopically punctured; also with a few large piliferous punctures, armed with 11 teeth, the posterior ones smaller. The scape is thicker than in *coarctata* Latr., and extends beyond the occipital margin; 3rd–10th joints of the flagellum distinctly wider than long. The profile of the thorax is evenly and feebly convex from front to back. The sutures well defined but not deep. Pronotum feebly marginate. The dorsum and declivity of epinotum subequal, their junction forming a blunt angle; the dorsum narrow, very convex transversely, the declivity margined. Scale of petiole twice as wide as long, rounded from front to back above; the anterior and posterior faces flat and subvertical, (a little thicker below than at the top), without distinct margins. It is a little higher than the thorax and abdomen, and bears below a compressed projection. First abdominal segment higher and wider than long, narrower in front than behind, and longer than the 2nd.

♀, 3·9 mm. Anterior margin of the pronotum, scutellum and metanotum testaceous red. The scutellum and metanotum much smoother and more shining than the rest of the sculpture, which, like the colour, is similar to that of the ☿. The thorax is higher and stouter than in *coarctata*. The dorsum of the epinotum is one-third the length of the declivity. The scale of the petiole is thinner above, the anterior face slightly more oblique, otherwise as in the ☿."

Richmond, Natal, (Traegaordh).

Race DURBANENSIS, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 213, ☿, 1914.

" ☿, 3 mm. Much smaller than the type of the species. The scale is lower and thicker. The 1st abdominal segment is vertically truncate at the base, forming an abrupt angle with the upper surface, instead of a curve as in the type. The abdominal constriction is also stronger, and the angle between the two faces of the epinotum more abrupt. The scape does not reach the occipital margin, being short of it by one and a half times its thickness. . . . The mesoepinotal suture is deeper. The puncturation is a little more feeble and sparse on the body, which, like the head, is shining. The pubescence is weaker. Brown; mandibles, legs, apex of abdomen and petiole brownish yellow."

♀, (hitherto undescribed), 4 mm. Body entirely black; mandibles, antennae, tibiae, tarsi and articulations of the legs dark ferruginous. Head very slightly shining, the rest of the body shining. Otherwise like the type of the species.

Durban, (Arnold, Marley); under stones in moist places. (R.M., G.A., colls.)

PONERA SPEI, Forel, race DEVOTA, Santschi.

loc. cit., p. 5.

"☿, 3·3 mm. Testaceous red; upper surface of head and middle of the abdomen browned; tarsi a little paler. Dull; sides of abdomen subopaque. Densely and finely punctured; sides of meso- and metasternum longitudinally striate. A downy, yellowish pubescence, fairly long, is present all over, but does not hide the sculpture; it is divergent on the frons, from a line which reaches the occiput. Pilosity fairly abundant on the abdomen, scanty elsewhere. Head rectangular, as wide in front as behind, the posterior margin straight, the sides fairly convex. The eyes have 4 or 5 colourless facets, and are placed in the anterior fourth of the head. Clypeus produced in the middle, the sides feebly emarginate; the blunt carina is feebly impressed anteriorly (much less clearly than in *sulcatinasis*). The scape extends beyond the occipital margin by about a third of its thickness; 7th, 8th and 9th joints of flagellum a little longer than wide. Mandibles with 5 teeth in front and 6 smaller teeth behind. Smooth, shining, with a few scattered punctures. Profile of thorax a little convex, thoracic sutures distinct, the mesoepinotal slightly impressed. Dorsum of epinotum a little longer than the declivity, joining it by a rounded angle, convex transversely; the declivity margined. Scale of petiole twice as wide as long, rounded above, distinctly convex transversely in front, with the two faces vertical and not margined, hardly as high as the epinotum or 1st abdominal segment. The latter as high as long, and a little shorter than the 2nd. Richmond, Natal. (Traegaordh.)"

Var. SANCTA, Forel.

Loc. cit., p. 213, ☿.

☿, 3·4–3·5 mm. Dark yellowish red, the legs paler. Very similar to the type, but the body is shining and the puncturation scantier.

The eyes are smaller and placed farther forwards. The declivity of the epinotum is as long as the dorsum. 7th–10th joints of the flagellum a little wider than long.

Durban, (Arnold). (S.A.M., R.M., G.A., colls.)

PONERA TRAEGAORDHI, Santschi.

Loc. cit., p. 6, ☿.

"☿, 2·1 mm. Testaceous yellow. Frons and abdomen rusty red. Mandibles, antennae and tarsi of a lighter yellow. Shining. Head densely and finely punctured, subopaque. Piligerous puncturation finer on the thorax and petiole than on the abdomen. Pubescence short, not abundant and not hiding the sculpture, somewhat erect on the thorax. Pilosity scanty, absent from the legs. Head rectangular, the sides subparallel, occipital margin straight, nearly one-quarter longer than wide. Eyes indistinct, reduced to a small spot on the anterior fourth of the head. Clypeal carina rounded, especially in front; anterior margin of clypeus arcuate. The scape does not reach the occipital margin, being short of it by a length equal to its thickness; 3rd–10th joints of the flagellum distinctly wider than long. Mandibles smooth, shining, sparsely punctured, with 9 or 10 teeth. Profile of thorax evenly and moderately convex from front to back; pro-mesonotal suture distinct. Declivity of epinotum flat, distinctly margined. Pronotum with moderately distinct shoulders. Scale of petiole two and a half times wider than long, the summit transversely convex in front, feebly concave behind, nearly as thick above as below. The summit has a slightly convex surface, distinctly delimited from the anterior and posterior faces, as high as the 1st abdominal segment. The latter is higher and wider than long, shorter than the 2nd segment."

Pietermaritzburg (Traegaordh).

PONERA DULCIS, Forel, var. UNCTA, Santschi.

Loc cit., p. 7, ☿.

"☿, 2·5 mm. Reddish yellow. Mandibles, antennae, tarsi, petiole and anus yellow. Very shining. Puncturation more sparse than in the type, the pronotum below finely reticulate. Pubescence a little feebler. The head is a little wider, the sides more convex; the scape extends a little beyond the straight occipital margin. The flagellum is longer. Clypeus more elongate, strongly carinate, and very distinctly defined posteriorly. Mandibles smooth, shining, very finely and sparsely punctured, the masticatory margin with 3 little teeth in front and about a dozen denticulations behind. The single-faceted eyes are very distinct, and placed in front of the anterior fourth of the head. Promesonotum slightly more convex than in the type, but less than in *coarctata*, race *boerorum*, Forel. Epinotum as in the type species. Scale of petiole a little thicker below, and rather convex in front, but the summit is as thin as in *dulcis*, i. sp., and its margin is slightly rounded transversely. The 1st abdominal segment is shorter. Otherwise similar to the type."

Dukudu, Zululand. (Traegaordh); in moss.

PONERA COARCTATA, Latr., race NATALENSIS, Santschi.

Loc. cit., p. 7, ☿.

"☿, 2·7 mm. Testaceous red, with a brown spot on the middle of the frons. Mandibles, antennae, tarsi and anus yellowish. Slightly shining, especially the angles of the head and the sides of the body. A little more finely punctured than *coarctata*, especially on the sides of the thorax where the puncturation is very scattered; a few longitudinal striae on the sides of the metasternum. The yellowish pubescence is more abundant but shorter than in *coarctata*. Erect pilosity moderately abundant on the body, especially the abdomen, absent from the legs (except a few hairs above the calcar). Head nearly one-quarter longer than wide, rectangular, the sides feebly convex, the posterior margin straight. Eyes composed of a single pigmented facet, placed in the anterior fourth of the sides of the head. The frontal sulcus reaches the middle of the head. Clypeus shorter than in *coarctata*, subtruncate in front, with a median and very blunt carina, which is not impressed anteriorly. The scape, relatively thick, almost reaches the occipital margin; 2nd–10th joints of the flagellum wider than long. Mandibles smooth, finely reticulate at the base, with a few piligerous punctures, and with 7 or 8 teeth, the last three very small. Thorax low and elongate, the dorsal profile feebly and regularly convex. Dorsum of the epinotum a little longer than the declivity, the junction of the two forming a very gradual curve. Thoracic sutures distinct. Scale twice as wide as long, strongly convex transversely in front, its summit feebly rounded and as large as its base; anterior and posterior faces vertical, submarginate in front; ventral lamella produced in front. Differs from the race *boerorum* by its shorter mandibles, the slightly longer scapes, the less deep mesoepinotal suture, the thicker scale and the colour."

Richmond, Natal (Traegaordh).

PLECTROCTENA MINOR, Emery, race CONJUGATA, Santschi.

Loc. cit., p. 8, ☿.

This must be sunk to a synonym of *P. mandibularis*, Smith. An examination of a specimen sent to me by the author shows that it does not differ from the small variety of *mandibularis*, which is found in the coastal regions of the eastern part of the Cape Province. The species becomes progressively larger the farther it is from the coast, and a complete transitional series can be found from the smallest (Durban, etc.) to the largest or typical *mandibularis*, such as is found in Rhodesia.

It is, therefore, also open to doubt whether the species *minor*, Emery, should be considered valid.

TRIBE LEPTOGENYINI.

LEPTOGENYS MAXILLOSA, Smith.

Bulawayo.

LEPTOGENYS INTERMEDIA, Emery.

Rend. Acc. Sc. Bologna, p. 32, ☿, 1901–2.

☿, 4·8 mm. Black; legs dark brown, mandibles, flagellum, tarsi and apex of abdomen ferruginous, the articulations of the legs, and the base of all the femora and tibiae paler. Smooth and very shining, almost impunctate. A very fine, short and sparse pubescence on the head, thorax, petiole, and legs, the pubescence on the abdomen a little longer; a few pilose hairs on the clypeus. Head as wide in front as behind, or only very little wider, the posterior margin convex. Very similar to *nitida*, Smith, from which it differs by the smaller size, the narrower and convex hind margin of the head, and the relatively shorter petiole, which has the anterior half very little narrower than the posterior (distinctly narrower in *nitida*).

Durban, (Cooper, Marley).

(S.A.M., R.M., G.A. colls.)

LEPTOGENYS HAVILANDI, Forel, race FURTIVA, n. r.

☿, 6·5–6·8 mm. Sculpture of the head much finer than in the type of the species, reticulate-punctate, the punctures shallow and irregular, not distinct and sharply defined, with smooth spaces in between as in the type of the species. The sculpture of the thorax like that of the head and much finer than in the type. In the latter the pronotum has some shallow grooves radiating out from a median point just in front of the posterior margin, these are entirely absent in the race. Both thoracic sutures much deeper. The dorsum of the epinotum is shorter than in the type of the species, and is distinctly but moderately convex lengthwise, (almost flat in the type), and its junction with the declivity is more angular and abrupt. The declivity is two-thirds as long as the dorsum, (barely one-half in the type of the species), and is strongly striated transversely. Node of petiole narrowed in front and less convex transversely above. First two abdominal segments very closely and finely reticulate rugulose and dull (smooth and shining in the type of the species), 3rd segment and following segments shining, the 3rd shallowly and closely punctured. Epinotum, node and abdomen with an abundant, long and decumbent pubescence (almost entirely absent in the type of the species). Head, thorax and node dull (the node is moderately shining in the type of the species).

Hillside, Bulawayo. Marching in single file, carrying termites in their jaws.

(S.A.M., R.M., G.A. colls. ; type in my collection.)

Having seen specimens of *Havilandi*, i. sp., (*leg.* Haviland, *ex* Natal Mus. coll.), I am able to confirm the disparity between that species and *Peringueyi*.

LEPTOGENYS PERINGUEYI Forel.

Page 97, line 16. For " 1st joint " read 2nd joint.

LEPTOGENYS ATTENUATA Smith.

Page 97, *L. Jägerskioldi*, Santschi. This is only a synonym of *L. attenuata*, Smith, (Santschi, emend. Ann. Soc. Ent. France, vol. 85, page 279, 1916).

LEPTOGENYS ATTENUATA, Smith, var. CRASSINODA, n. v.

☿, 6·8–7 mm. Smaller than the type of the species and differing as follows. The head is much less narrowed behind, being barely narrower there than in front. The scapes are a little shorter, all the joints of the flagellum also shorter, the 2nd joint one-sixth longer than the 1st (one-third longer in the type of the species ; erroneously stated on p. 98 as two-thirds longer). Node of petiole much shorter and much less attenuated in front. It is only one-third longer than wide, and three-fifths wider behind than in front, about as high behind as long (much longer than high in the type of the species). Pilosity on the abdomen scantier, otherwise like the type of the species.

East London (Dr. Rattray). Type in the Albany Museum coll. (G.A. coll.)

LEPTOGENYS NITIDA, Smith.

♀, (hitherto undescribed), 6·1 mm. Ergatoid.

Mesonotum more or less circular, a little wider than long, three-fifths as long as the pronotum. Posteriorly the mesonotum is separated by a wide and convex groove from the small and transversely oval scutellum. A trace of the metanotum is visible only at the sides. The metaepinotal suture wider and much deeper than in the ☿. Dorsum of epinotum slightly widened posteriorly, convex lengthwise, about one-half longer than the declivity, which is transversely striated. Petiole inclined forwards, three-fourths wider than long, widest behind, much higher than in the ☿, the anterior face feebly convex, the posterior face concave. Abdomen like that of the ☿ but proportionately stouter. Otherwise like the ☿.

Eshowe, Zululand, (H. B. Marley), taken with the ☿☿. Type in my coll.

LEPTOGENYS NITIDA, var GRANDIOR, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 335, ☿, 1914.

☿, 5·5–6 mm. Larger and darker than the type of the species, almost jet-black. The head is relatively wider, and is as wide behind as in front (narrower behind in the type). The node of the petiole is a little wider behind than long (as wide as long in the type), and more convex above, the anterior and posterior faces more convex lengthwise. Otherwise like the type of the species.

Krantz Kloof, Natal, (H. B. Marley).

(S.A.M., R.M.. G.A. colls.)

LEPTOGENYS NITIDA, Smith, var. AENA, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 215, 1914.

The pale form has been separated by Dr. Forel as a distinct variety, *aena*. In addition to the colour, it differs from the type of the species in having the head a little narrower, especially behind, where it is a little narrower than in front. The eyes are smaller and flatter, the scapes a little longer. The key on page 95, (12) 11 . . ., should be altered accordingly.

LEPTOGENYS NITIDA, var. ADPRESSA, Forel.

Loc. cit., p. 214, ☿.

☿, 5 mm. The legs are entirely pale ferruginous, the scapes brownish, not black as in the type. The pubescence is decumbent, not erect.

The eyes are decidedly smaller. The head is slightly wider in front. The thoracic sutures stronger; the dorsum of the epinotum a little shorter and the declivity longer and more oblique than in the type species. The node of the petiole is also distinctly shorter and wider than in the type, one-third wider behind than long, (as wide behind as it is long, in the type). Grahamstown, Hewitt, (G.A. coll.).

From Durban, (*leg.* Marley), I have received some specimens intermediate between this variety and the type and *intermedia*, Emery. They are smaller (4·3 mm.) than the variety, and have the node a little longer, but not so long as in the type or in *intermedia*. *Nitida* and *intermedia* are evidently very closely allied.

L. NITIDA, race BREVINODIS, Forel.

Loc. cit., p. 335, ☿.

☿, 5–5·3 mm. Varying from dark reddish brown to piceous, the head and abdomen darkest. Legs and antennae entirely reddish ochreous. Mandibles ferruginous. Head less narrowed behind than in the type of the species, almost as wide there as in front. Dorsum of epinotum a little shorter and the declivity a little longer. Node of the petiole much wider than in the type of the species, one and a half times wider than long, one-third wider behind than in front. Otherwise like the type of the species.

George, Cape Prov., (Brauns).

(R.M., G.A. colls.).

L. NITIDA, race INSINUATA, Santschi.

Göteborgs Vetens. Vitterh. Handl., 15, 2, p. 11, ☿, 1914.

"☿, 4·6 mm. Blackish brown. Mandibles, middle of the frons, antennae, legs and anus reddish yellow. Smooth and shining like the type of the species. The head is about one-quarter narrower behind than in front, twice as long as wide behind. The eyes are placed a little more forwards, and the clypeus is more angular in front. The scape extends beyond the occipital margin by about one-fourth of its length, (one-sixth in the type). The wider mesoepinotal suture extends over the side to behind the middle pair of coxae, and is coarsely clathrate. Declivity of epinotum transversely striate. The node of the petiole is a little higher behind. First abdominal segment very narrow in front, longer than wide, the 2nd segment narrower and as long. Otherwise like *nitida*, from which it differs chiefly by the shape of the head and the meso-epinotal suture."

Richmond, Natal, (Traegaordh).

L. PARVA, var. DISPAR, Santschi.

Göteborgs Vetens. Vitterh. Handl., vol. 15, pt. 2, p. 10, ☿, 1914.

" The eyes are larger than in the type, composed of about 28–30 facets. The scape extends slightly beyond the occiput, but much less than in *L. castanea.* The 2–10th joints of the flagellum as wide as long. The dorsum of the thorax is feebly emarginate ; the head is a little longer than wide and fairly convex behind, transitional to that of *castanea.*"

Zululand, (Traegaordh).

L. PARVA, Forel, var. BELLUA, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 214, ☿, 1914.

☿, 3·5–3·9 mm. Differs from the type of the species by its slightly longer head, with the posterior margin almost straight or more shallowly concave. The 4th–10th joints of the flagellum are a shade wider. The node of the petiole is slightly longer, or one and a half times wider behind than it is long (one and two-thirds in the type). The declivity of the epinotum is shorter, more oblique and less angular below.

Durban, (Arnold, Marley, Cooper and Bevis).

(S.A.M., R.M., G.A. colls.)

♀, (hitherto undescribed), 5 mm. Ergatoid. Piceous, the apical margins of the abdominal segments ferruginous, legs and antennae brownish yellow, the femora and apical half of the scapes darker. Pilosity longer and more abundant than in the ☿. Head distinctly wider in front than behind, the posterior margin moderately concave, the posterior angles less rounded than in the ☿. Eyes larger ; the anterior ocellus is well developed and is placed at about the posterior fourth of the head, (measured from the apex of the clypeus). Pronotum one-third wider than long, (longer than wide in the ☿). Mesonotum only a little wider than long, (twice wider than long in the ☿). Dorsum of epinotum merging into the declivity by a very gradual curve ; it is very little longer than the declivity, (in the ☿ at least twice as long), and the dorsal profile is much more convex. The node of the petiole is wider and shorter, and slants strongly forwards ; it is three times wider than long, (in the ☿ only a trifle wider than long) ; the anterior face is convex transversely and subvertical, the posterior face vertical. The abdomen is much wider than in the ☿, the 1st segment being quite twice as wide as the node and subtruncate at the base, slanting slightly forwards. Otherwise like the ☿.

Taken with ☿☿. Krantz Kloof, Natal, (Marley). In my collection.

TRIBE ODONTOMACHINI.

ANOCHETUS BEQUAERTI, Forel, race ABSTRACTA, Santschi.

Göteborgs Vetens. Vitterh. Handl., vol. 15, pt. 2, p. 12, ☿, 1914.

The only differences which I can recognise, to judge from the author's detailed description, are the slightly smaller size, (4·6 mm.), the larger eyes, which are one-fifth the length of the sides of the head, and the darker colour of the middle of the head above. Otherwise exactly like the type of the species.

Amanzimtoti, Natal, (Traegaordh).

ANOCHETUS PUNCTATUS, Santschi.

Loc. cit., p. 13, ☿.

"☿, 3·6 mm. Reddish brown; head and femora yellowish red, the rest of the legs and the flagellum yellowish. The greater part of the head, the dorsum of the promesonotum, and abdomen irregularly and fairly strongly punctured, smooth and shining. Antennal hollows, cheeks, sides of the thorax and the scale smooth and shining. Dorsum of the epinotum coarsely, the declivity superficially striato-rugose transversely. The vertex of the head, from the frontal carinae backwards, is fanwise striated as far as the middle of the head, the outermost striae curving round behind the antennal hollow and becoming extinguished at about the level of the eyes. A short pubescent hair is inserted in each puncture. Antennae and legs pubescent, the abdomen with a long and erect pilosity. Head a little longer than wide, feebly emarginate behind. Eyes moderately convex, composed of 25–30 facets. Clypeus triangular, its anterior margin transverse, prolonged backwards in a narrow strip between the frontal carinae. Mandibles half as long as the head, dilated in their distal half, the superior internal border trenchant, not dentate, margined with a row of piligerous punctures; the inferior internal margin very finely and distantly denticulate. The upper and lower apical teeth subequal, the intermediate inserted at the basal third of the lower tooth, short and obtuse. The scape extends back as far as the posterior angle of the head, 3rd–5th joints of the flagellum as wide as long, the succeeding joints distinctly longer (shorter in *punctaticeps*, Mayr.). Thoracic sutures well defined. The mesonotum is wider than long and slightly raised in front behind the promesonotal suture, which is somewhat impressed. Dorsum of epinotum flat, submarginate, parallel-sided in the anterior half, divergent behind towards the teeth, which are fairly strong and obtuse. Declivity marginate, slightly convex. Scale oval, the summit truncate and distinctly emarginate (rounded in *punctaticeps*). Abdomen barely constricted between the 1st and 2nd segments. This species is closely allied to *punctaticeps*, Mayr, which is not known to me in nature. It differs by the stronger puncturation of the thorax and by the other characters cited above. In *talpa*, Forel, the eyes are much smaller."

Lake Sibayi, Zululand, 1 ☿, (Traegaordh) ; Durban (Arnold).

Var. DURBANENSIS, n. v.

☿, agrees with the description of the type species except in the following details.

The mandibles are a little less than half the length of the head ; the 3rd and 4th joints of the flagellum are wider than long, the 5th as wide as long, and the scale of the petiole above is convex transversely, not emarginate.

Durban, 1, ☿. Type in my collection.

ANOCHETUS NATALENSIS n. sp.

☿, 5·9 mm. Head, mandibles and antennae dark reddish amber-yellow, coxae, trochanters and femora pale straw-yellow, tibiae and tarsi pale reddish ochreous, thorax and abdomen castaneous brown, the abdomen sometimes almost piceous. An abundant, exceedingly fine and decumbent pubescence present only on the legs and antennae, the mandibles with a sparse pubescence, the abdomen with a very scanty, yellowish, exserted and fairly long pilosity, the rest of the body glabrous. Shining all over, except the striated area of the head which is slightly dull, the abdomen smooth and very shining. Middle of the head above finely and longitudinally striate, the striae starting at the apex of the frontal carinae and extending fanwise backwards, in the middle almost as far as the occipital margin, at the sides as far as the upper third of the postocular hollows, the antennal hollows and the rest of the head quite smooth. Pronotum transversely and superficially rugulose over the neck and just behind it, the rest of the segment longitudinally and also somewhat concentrically rugulose, the sculpture exceedingly superficial or almost effaced. Mesonotum strongly and transversely striate. Epinotum almost smooth, the dorsum only microscopically reticulate, the sides feebly and obliquely rugulose on their upper half, the sculpture almost effaced like that of the pronotum. Scale smooth. Head, excluding the mandibles but including the occipital lobes, one-fifth longer than wide across the eyes, where it is widest. Antennal hollows deep, deeper than in *A. Bequaerti*, and distinctly delimited behind by the striated sculpture. Clypeus as in *Bequaerti*, but a little more deeply emarginate in front. Mandibles half as long as the head, the upper and lower inner margins straight and unarmed, the upper apical tooth very little shorter than the lower one, the latter with a smaller tooth on its upper edge which is half as long as the lower tooth. Second, 3rd and 4th joints of the flagellum of equal length, the 2nd joint twice as long as wide and two-thirds as long as the 1st, all the joints considerably longer than wide. Eyes fairly large, relatively larger and more convex than in *Bequaerti*. Occipital emargination deep, nearly one-third as deep as wide. Pronotum, excluding the neck, as long as wide; promesonotal and meso-epinotal sutures wide but shallow. Mesonotum nearly one and a half times wider than long. Dorsum of epinotum, (including the metanotal region which is indicated only by a feeble transverse impression at the anterior 3rd of the epinotum), straight, slightly oblique lengthwise, feebly convex from side to side, nearly three times longer than wide, parallel-sided or only very slightly widened posteriorly, where it ends on each side in a triangular and dentiform tubercle; declivity subvertical, one-third the length of the dorsum. Scale of petiole cuneiform, one-fourth higher than the petiole is long and higher than the brow of the declivity, twice as high as wide, the sides almost straight or only very feebly convex, the upper edge fairly thin and shallowly emarginate in the middle, the anterior face convex from side to side, straight and oblique from above to below, the posterior face flat and vertical.

Pietermaritzburg (Dr. C. Akerman), 3 ☿☿, *ex* Natal Mus. coll.

Allied to *africanus*, Mayr, and *Traegaordhi*, Mayr. From the first it differs by the almost smooth pro- and epinotum and the longer 2nd joint of the flagellum; from *Traegaordhi* it differs by having the inner, upper and lower margins of the mandibles edentate, by the epinotum (transversely striato-rugose in *Traegaordhi*), and by the darker colour.

Type in my collection.

A. JONESI, n. sp.

☿, 4·5–4·8 mm. Yellowish brown, (raw sienna); the thorax, antennae and mandibles somewhat darker and with a reddish brown tinge. Smooth and very shining. The head above sparsely but strongly punctured, except in the middle of the vertex. The sides of the head and the antennal hollows impunctate. The frons between the frontal carinae fanwise longitudinally striate, the striae curving round outwardly, but laterally not extending to the outer edge of the antennal hollows, and posteriorly not beyond the anterior half of the head. Mandibles sparsely and finely punctured, the scapes very finely so. Dorsum of epinotum superficially coriaceous; otherwise impunctate. A sparse, yellowish, and short pilosity present all over, very scanty on the thorax. A very scanty pubescence on the mandibles.

Head, excluding the mandibles, one-sixth longer than wide across the level of the eyes, where it is widest; it is, however, not wider there than across the occipital lobes by more than the length of the 1st joint of the flagellum. The sides of the head behind the eyes more deeply excavated than in *punctaticeps*, the occipital emargination as deep as in that species. Clypeus and frontal carinae as in *punctaticeps*. Mandibles half as long as the head, their internal inferior margin very feebly and obtusely denticulate, their superior margins edentate, fairly strongly widened towards the apex, being nearly twice as wide behind the teeth as at their base. The upper or preapical tooth is as long and as acute as the apical, and the subapical, which springs from the base of the apical is about half as long as the other two. The scapes extend back as far as the apex of the occipital emargination, but do not reach as far as the posterior angles of the head; 3rd–5th joints of the flagellum about as long as wide, all the rest longer than wide. Eyes small, not longer than the 3rd joint of the flagellum, composed of about 15–18 indistinct facets. Pronotum narrower and more elliptical in front than in *punctaticeps*, as long as wide. The promesonotal and mesoepinotal sutures shallow but very broad. The mesonotum (excluding the suture) about half as wide again as long (at least twice as wide as long in *punctaticeps*). The dorsum of the epinotum is as long as the pronotum, much narrower at the base than at the apex (shaped like an isosceles triangle), more convex transversely in its basal half than in *punctaticeps*, and ending in stronger and more prominent teeth than in that species; the declivity is vertical, shorter than the dorsum (at least as long in *punctaticeps*). The node of the petiole cuneiform in profile, its anterior face feebly convex transversely, the posterior face flat, its upper edge feebly arcuate, and thicker than in *punctaticeps*. Seen from in front, the node is barely narrower above than below; seen from the side, it is about three-

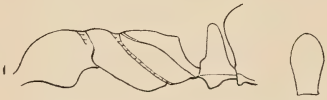

FIG. 61.—*A. Jonesi*, n. sp.

quarters higher than wide at the base ; the ventral lamella is produced into a blunt triangular tooth. Abdominal constriction feeble.

♀, 4·8 mm. Dorsum of epinotum more strongly sculptured than in the ☿, or transversely rugose. Mesonotum trapezoidal, widest in front, as long as wide. Scutellum oval, slightly wider than long and less than half as long as the mesonotum. A distinct and narrow metanotum present. Dorsum of epinotum one-third longer than wide, but little wider across the teeth than at the base. The teeth a little more acute than in the ☿. (Deälated.) Otherwise exactly like the ☿.

♂, 3·3 mm. Black ; legs and first two joints of the antennae pale ochreous, the rest of the antennae, the clypeus and mandibles pale yellowish brown. Head and thorax dull, coriaceous-reticulate, sides and declivity of epinotum and node of petiole smooth and shining, abdomen shining, very shallowly punctured. Pubescence pale ochreous, fairly dense all over except on the epinotum and petiole, intermixed on the abdomen with a few longer and darker hairs.

Head, seen from in front, semicircular, the eyes occupying the anterior half of the sides. Scapes half as long again as the 1st joint of the flagellum. This joint is as long as wide, all the other joints much longer than wide. The scapes extend laterally barely beyond the inner margin of the eyes. Clypeus obtusely carinate. Mandibles very small or atrophied. Pronotum slightly exposed above. Mesonotum wider than long, strongly convex above and in front. Scutellum gibbous, less than half as long as the mesonotum. Metanotum acuminate in the middle. Dorsum and declivity of epinotum oblique, subequal, the dorsum ending on each side in a flattened and inconspicuous tubercle. Node of petiole highest behind, as high as long, the anterior face oblique, quadrate and twice as long as the vertical posterior face ; the dorsal edge thick and rounded from front to back. Wings smoky hyaline, nervures and stigma brown.

Allied to *punctaticeps*, Mayr, and *punctatus*, Santschi, but larger, darker and differently sculptured.

M'fongosi, Zululand (W. E. Jones), *ex* Natal Museum coll.

(S.A.M., R.M., G.A. colls. Types in my collection.)

ODONTOMACHUS ASSINIENSIS, Emery, race CAFFRORUM, Santschi.

Ann. Soc. Ent. France, vol. 60, p. 558, ☿, 1891.

(race) Göteborgs Vetens. Vitterh. Handl., vol. 15, 2, p. 14, ☿, 1914.

The description of the type of the species is as follows :—

" ☿, 13 mm. long including the mandibles ; the latter 2·3 mm. long ; head 3·5 by 2·3.

Dark testaceous, the head in front and the thorax behind fuscous, mandibles, petiole and apex of abdomen blackish. Head striated above, the striae on the frons finer, exceedingly delicate and superficial on the sides of the occiput, almost obsolete on the antennal and postocular hollows, the occipital sulcus absent, the occipital suture fairly distinct, the margin of the occiput very slightly raised; inner margins of the mandibles denticulate, the preapical tooth broad, truncate and shorter than the apical; 1st joint of the flagellum shortest, the 2nd longest, distinctly longer than the following. Thorax moderately robust, transversely striate. Petiole and abdomen very shining. . . . The whole of the upper surface of the head is striated, as in *haematodes*, but the striae are stronger and farther apart than in that species, easily defined under a low magnification, . . . the posterior part of the head appears somewhat shining to the naked eye, whereas in *haematodes* the whole of the head is dull, with a somewhat silky sheen. Abyssinia.”

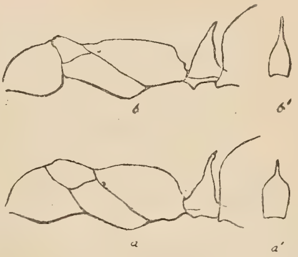

Fig. 62.
a, *O. haematodes.* ☿
b, *O. assiniensis*, race *caffrorum.*
a′ and *b′*, front view of the petiole.

The race *caffrorum* is distinguished as follows:

“☿, 13 mm. Length of the head, including the mandibles, 5 mm., widest across the eyes, 2·5 mm. Posterior tibiae, 3 mm. long. The striae on the head are much less transverse behind than in *assiniensis*, i. sp., and are intermediate in character between that species and *haematodes*. On the pronotum the striae are absolutely transverse as in the type of the species, but they are a little coarser, although becoming effaced behind. Colour as in the type. The head is much larger, the mandibles clearly larger. The scape does not extend beyond the occiput. Thorax more robust, with a longitudinal groove extending over the whole of the dorsum of the epinotum. The latter is flatter and less convex than in the type.”

Dukudu, Zululand, (Traegaordh); Amatongas Forest, Portuguese East Africa, (Arnold).

(S.A.M., R.M., G.A. colls.)

In neither Emery's description of the type, nor in Santschi's of the race is the structure of the petiole mentioned. This is of far greater diagnostic value than the sculpture, which is exceedingly variable. The petiole in *caffrorum* is thinner and narrower than in *haematodes*, and seen from in front is far more gradually acuminate than in that species. I therefore give figures of the thoraces and petiole of the two forms. The sculpture of the pronotum, even in examples from the same nest, varies between the two extremes of being transverse or longitudinal, the posterior striae becoming more and more arcuate anteriorly till at last they occupy a median and longitudinal position, the anterior striae being arranged more or less concentrically and outside them.

DORYLINAE.

Page 110, line 26. For " Membracid " read, Fulgorid.

Page 113, first line after the key, this should read, " The *Dorylini* and *Ecitini* are the only tribes represented in South Africa."

TRIBE DORYLINI.

DORYLUS BRAUNSI, Emery, p. 120. This should read,
D. BRAUNSI, Emery, race ANCEPS, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 215, 1914.

Dr. Forel's description is reproduced herewith.

" Distinguished from the type as follows: The head is distinctly of a reversed trapeze-shape, much narrower behind than in front. Its posterior margin is about one-third narrower than the anterior, even in the smallest ☿☿ it is a little narrower. The thorax is much less flattened above, hardly very obtusely submarginate. Seen in profile, the pronotum in front and the epinotum behind are convex, and pass into the dorsum by a much more gentle curve. The petiole is wider, one and a half times wider than long; its angles less rounded. The 2nd–9th joints of the flagellum are at the most only one and a half times wider than long (at least twice as wide as long in the type of *braunsi*). Moreover, the puncturation of the head, although sparse, is much more distinct; that of the thorax is also a little stronger, whereas that of the petiole, which is a little more shining than in the type, is less dense."

DORYLUS DIADEMA, Gerst., race ARNOLDI, Forel.

Loc. cit., p. 216, ♂.

♂, 22 mm. Dark ochreous yellow, the thorax slightly fuscous, the genital armature and the apical margins of all the abdominal segments darker, somewhat reddish. Head blackish brown, eyes black; mandibles and legs bright castaneous brown; antennae ferruginous, paler towards the apex.

"In greater part like the type, but differing in the following features. The posterior margin of the head is strongly convex; the eyes are smaller and less convex. The head is not wider than the thorax. The petiole is wider and shorter than in the type, nearly one and a half times wider than long. The colour of the thorax and wings is also darker. It differs from *montanus*, Sants., by the total absence of an erect pilosity, on the abdomen as well as on the thorax and petiole. Moreover, it differs from *montanus* and from the type of *diadema* by its genital armature. The stipes are not truncate at the apex as in *montanus*, but bevelled, almost as in *diadema*. The volsellae bear on one side a row of hairs and are slightly widened at the apex, which are strongly punctured and truncate curvedly. The sagittae are also somewhat swollen at the apex, which ends below in a sharp point. The subgenital plate has the same shape as in *montanus*."

Bulawayo; fairly common at light.

(S.A.M., R.M., G.A., colls.)

DORYLUS (s.g. ALAOPONE) MONTANUS, race AUSTRALIS, Santschi.

Rev. Zool. Afr., vol. 6, fasc. 3, p. 231, ☿, 1919.

"☿, media minor, 3·5 mm. Differs from the type of the species of the same size by the absence of the longitudinal frontal impression. The thorax is a little less coarsely punctured. The middle joints of the flagellum are a little thicker. The petiole is wider and angular, as wide behind as long, its posterior margin a little narrower than the front of the postpetiole. (Distinctly narrower than the postpetiole and more rounded in *montanus*.) In the ☿ 4·6 mm. long, the front of the pronotum has a fundamental sculpture which is very finely reticulate and less shining than the rest of the thorax. The head is a little more robust and less parallel. The head is also slightly more rusty red, the whole insect darker. The abdomen is a little wider and shorter.

☿, minor, 2 mm. Like the ☿ minor of *atriceps aegyptiaca*, pale yellow; antennae 9-jointed.

Probably larger forms of the ☿ exist.

Herschel dist., Cape Prov., *ex* Albany Mus. coll."

DOLICHODERINAE.

TRIBE TAPINOMINI.

TAPINOMA ARNOLDI, Forel, var. TECTUM, Santschi.

Ann. Soc. Ent. France, vol. 85, p. 288, ☿, 1916.

☿, 1·5–1·8 mm. Pale ochreous, the posterior femora slightly smoky yellow. Smaller and more slender than the type of the species. The head is also relatively narrower, or one-fourth longer than wide, and with quite straight sides. The eyes are nearer the anterior margin, their distance from the same being less than their own length. Otherwise like the type of the species.

Durban, (H. B. Marley); Pretoria, (C. K. Brain).

(R.M., G.A. colls.)

In the author's original description, this insect has been made a variety of *T. tenue*, Forel. The latter name is due to a slip of the pen and should read *T. Arnoldi* (Santschi emend. in litt.).

TAPINOMA LUGUBRE, Santschi.

(as var. of *T. gracilis*, Forel), *loc. cit.*, p. 288, ☿, ♂.

☿, 1·6–1·8 mm. Sepia-brown, the legs and antennae smoky yellow, the tarsi very pale straw-yellow. Slightly shining. Microscopically reticulate-rugulose. Pubescence greyish, decumbent, microscopic and fairly abundant all over. Pilose hairs absent, except a few on the abdomen and anterior margin of the clypeus. Head a little less than one-third longer than wide, slightly narrowed in front, the sides feebly convex, the posterior margin very slightly convex. The middle of the anterior margin of the clypeus shallowly concave. Mandibles 6-dentate, shining, punctured. Eyes large, placed in front of the middle of the sides. The scapes extend beyond the hind margin of the head by nearly one-fourth of their length; all the joints of the flagellum at least twice as long as wide. Pronotum wider than long, and as long as the mesonotum. The latter is slightly longer than wide in front, much narrower and with a higher convexity transversely than in *gracilis*, Forel, also narrower behind (in *gracilis* as wide in front as behind and nearly flat above). The dorsum of the epinotum is a little wider than long, and is as convex as the mesonotum; it rises gently towards the declivity. The declivity is nearly vertical, almost twice as long as the dorsum, and separated from it by a fine raised line, the junction of the two faces sharply angular. Scale parallel-sided, oblong.

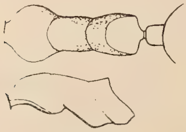

FIG. 63.
T. lugubre, Santschi.

♂, 1·8 mm. Blackish brown, legs and antennae coloured as in the ☿. Head longer than wide, subquadrate, slightly wider in front than behind. The eyes occupy a little less than the anterior half of the sides. Anterior margin of the clypeus entire, arcuate. Mandibles with an apical tooth only. The scapes are as long as the 1st and 2nd joints of the flagellum united; the 1st joint is one and a half times longer than wide, shorter than the following joints. Mesonotum a little wider than long, somewhat gibbous in front, its anterior margin semicircular. Scutellum roundly triangular. Epinotum as long as wide at the base, the two faces not distinctly delimited but forming a very low and continuous convexity. Petiole nodose, two-thirds wider than long, convex transversely. Wings slightly infuscate, nervures brown.

Victoria Falls.

Quite distinct from *gracilis*, Forel, a narrower and smaller insect, with the dorsum of the thorax not in the least flattened as in that species, and with the two faces of the epinotum sharply delimited.

(R.M., G.A. colls.)

TAPINOMA MINIMUM, Mayr.

Ann. K. K. N. H. Mus. Wien, vol. 10, p. 147, ☿, ♀, 1895.

☿, 1·2–1·4 mm. Varying from pale ochreous or pale reddish ochreous to pale yellowish sepia-brown. Pilosity present only on the clypeus and mandibles. Pubescence pale yellowish, decumbent, microscopic and not very dense. Moderately shining, smooth or with only a microscopic sculpture. Head slightly longer than wide, the sides moderately convex, a little narrower in front than behind, the posterior margin almost straight. Anterior margin of clypeus straight. Mandibles smooth, with 6 or 7 teeth. Eyes not very small; distant from the anterior margin of the head by as much as their own length. The scapes fall short of the hind margin by about as much as the length of the eye; 2nd–7th joints of the flagellum much wider than long. Pronotum, excluding the neck, one-third wider than long, its sides fairly convex, longer than the mesonotum. The latter trapezoidal, widest in front, one-fourth wider than long, the promesonotal suture moderately arcuate, the mesoepinotal suture straight. Dorsum of epinotum widened towards the apex, where it is half as wide again as long, only half as long as the steep declivity. The thoracic sutures very feebly impressed. The scale (entirely hidden by the overhanging abdomen) is longer than wide, narrowed above, ovate-lanceolate.

Zululand, (Traegaordh); Port Elizabeth, (T. Reeve); Natal, (Haviland).

(R.M., G.A. colls.)

TAPINOMA DANITSCHI, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 345, ☿, 1914.

☿, 1·2–1·7 mm. Varying from dark sepia-brown to brownish black, legs and antennae dark brown, tarsi pale ochreous, mandibles and scale brownish yellow. Smooth and shining, with a microscopic puncturation. Pilosity only on the anterior margin of the clypeus and the apex of the abdomen. Pubescence microscopic, very short and scanty. Head rectangular, one-fifth longer than wide, as wide in front as behind, the sides convex, the posterior margin straight. Mandibles smooth, shining, finely and very sparsely punctured. Anterior margin of clypeus feebly emarginate in the middle. The scapes fall short of the hind margin by about one-fourth of their length; all the joints of the flagellum, except the 1st and 3rd, clearly wider than long, the last joint distinctly swollen. Thorax like that of *minimum*, Mayr, but with the dorsum of the epinotum a little longer, a little wider than long and shorter than the declivity. Both thoracic sutures feeble. Scale fused with the petiole, tongue-shaped.

Durban, (C. B. Cooper); Umbilo, Natal, (L. Bevis).

(S.A.M., R.M., G.A. colls.) Closely allied to *minimum*, Mayr.

Var. BEVISI, Forel.

Loc. cit., p. 346, ☿, ♀.

☿, 1·5–2 mm. Abdomen paler than the thorax, yellowish brown. Anterior third of the head brownish, mandibles reddish yellow, otherwise coloured like the type of the species. The head is distinctly wider behind than in front, and the mesonotum is longer than in the type species, or as long as wide. Otherwise like the type.

"♀, 3·1 mm. Head very rectangular, quite one-fourth longer than wide, the posterior margin straight and the posterior angles well marked, only slightly rounded. The large flat eyes occupy nearly one-third of the sides. Flagellum a little thinner than in the ☿. Thorax hardly wider than the head; pronotum high and subvertical; abdomen elongate. Wings slightly infuscate. Otherwise like the ☿."

Durban, (C. B. Cooper).

(R.M., G.A. colls.)

MYRMICINAE.

Page 166. The ♂♂ of the Pseudomyrmini have 12-jointed antennae; not 13 as stated in the key.

Page 168. For "GG" read "CC."

Tribe PSEUDOMYRMINI.

Page 173, line 19, for "13-jointed" read "12-jointed."

Tribe OCYMYRMICINI.

Ocymyrmex Picardi, Forel.

Taken at Sawmills, Umgusa River, S. Rhodesia. The nest was placed under the roots of a bush and contained hundreds of ☿☿.

(S.A.M., R.M., G.A. colls.)

Tribe CARDIOCONDYLINI.

Cardiocondyla badonei, n. sp.

☿, 2–2·3 mm. Black or very dark brown, the thorax and petiole sometimes reddish brown, legs and antennae pale burnt-umber brown, the club of the flagellum and the middle of all the femora a little darker. Abdomen smooth and shining; head, thorax and petiole slightly glossy. Head finely reticulate, more widely and more distinctly than in *C. Emeryi*, Forel; thorax reticulate-punctate, very closely and superficially so above, more strongly at the sides. Petiole and legs very superficially reticulate. Declivity of the epinotum smooth and shining. A very fine, short and decumbent pubescence present all over.

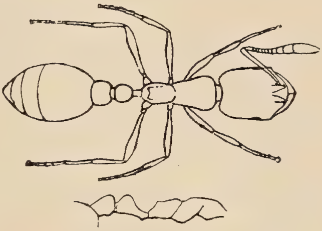

Fig. 64.
C. Badonei. ☿

Head relatively wider than in *C. Emeryi*, very little more than one-fourth longer than wide, slightly wider in front than behind, the sides straight, the posterior margin shallowly concave. Clypeus longitudinally striate in the middle, produced in front as a ledge which projects beyond the bases of the mandibles (as in *C. Emeryi*). The scapes fall short of the hind margin of the head by as much as the length of the 1st joint of the flagellum; the latter is as long as the 3 succeeding joints taken together, the 2nd–8th joints wider than long. Eyes placed in the middle of the sides of the head. Mandibles shining, sparsely punctured, striated at the base, quadridentate.

Promesonotum a little longer than wide in front, its anterior corners more rounded than in *C. Emeryi*, also less convex in profile. The mesoepinotal suture is much deeper than in *Emeryi*. Dorsum of epinotum about one and a half times longer than wide, twice as long as the declivity; the latter submarginate at the sides. The epinotum is armed with two triangular tubercles, hardly large enough to be termed teeth (*Emeryi* has distinct and acute teeth which are a little longer than they are wide at the base). The peduncle of the 1st joint of the petiole is shorter than the node. The node is more convex at the sides than in *Emeryi*, globose when seen from above, very little longer than wide. Second joint of the petiole wider than long, half as wide again as the 1st, shaped like that of *Emeryi*. First segment of the abdomen as wide as long (in *Emeryi* much longer than wide).

Amatongas Forest, Portuguese E.A.

(S.A.M., R.M., G.A. colls. Type in my collection.)

A larger species than *Emeryi*, and with differently shaped head and stronger sculpture. The reticulate character of the sculpture on the thorax is quite sharply defined, whereas in *Emeryi* the thorax appears to be covered with very shallow and circular pits.

TRIBE SOLENOPSIDINI.

Sub-tribe MONOMORIINI.

P. 204, 1st line of key. For "antennae 2-jointed" read "11-jointed (sub-genus *Mitara*, Emery)."

P. 205, No. 22. This is not *australe*, Emery, but another form, to which the name *ocellatum* may be given. See remarks farther on under *australe*.

MONOMORIUM AFRUM, André.

♀, (hitherto undescribed), 6·8 mm. The structure of this insect is exceedingly remarkable, recalling in the shape of the head and epinotum that of *Rhoptromyrmex transversinodis* ♀, and totally dissimilar to the other known ♀♀ of this genus.

Black, dull, the basal two-thirds of the 2nd and 3rd abdominal segments smooth, shining and microscopically reticulate. The rest of the body very finely and densely reticulate-punctate (much finer than in the ☿), also more or less longitudinally rugulose or striato-rugulose on the head and mesonotum above; these parts have also a shallow puncturation superimposed. Epinotum striato-rugose transversely above. The posterior faces of the two nodes similarly but less strongly sculptured. A fine, yellowish, oblique and fairly long pubescence present, not very abundant, decumbent on the legs and scapes. Pilosity yellowish, very sparse on the head and thorax, longer and more plentiful on the nodes. Apical margins of the abdominal segments with a dense tuft of long hairs at each corner. Head about as wide as long in the middle, very convex above, the sides almost parallel. Behind the ocelli the back of the head is convex and vertical, merging below into a horizontal shelf which is formed by a backward prolongation of the posterior margin and lateral lobes. The shelf and the lobes on each side of it are deeply excavated. The lateral lobes extend outwards and far backwards and are widely truncate at their apices. Mandibles strongly and longitudinally striate, sparsely punctured, 4-dentate. Anterior margin of the clypeus emarginate in the middle, the posterior margin not defined, the clypeus ends behind in a tubercle placed just between the anterior ends of the short and parallel frontal carinae. The scapes barely extend back as far as the level of the apices of the lateral lobes. The thorax is very high, almost twice as high as wide between the parapsidal sutures, the sides vertical. The anterior half of the mesonotum is very strongly compressed, and projects forwards over the pronotum and the hind margin of the head. Seen from above, the anterior half of the mesonotum is almost cristate in the middle and semi-elliptical in outline. The sides of the mesonotum external to the parapsidal sutures are steep and form a distinct angle at the sutures with the flat portion above. The thorax is long and narrow, nearly three times longer than wide. The upper surface of the epinotum is concave transversely and moderately convex longitudinally. The sides of the declivity are marginate, the margins being abruptly produced above into thin, slightly divergent and more or less semicircular walls or flaps which end in front at about the middle of the epinotal dorsum. These cristate flaps are about twice as long as high. Dorsal edge of the 1st node thick and shallowly emarginate; the dorsal face of the 2nd node flat or slightly concave, two and a third times wider than long. Deälated.

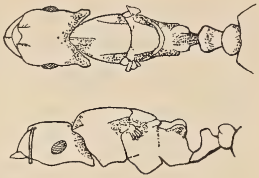

Fig. 65.
M. afrum. ♀

Bulawayo. Seven specimens, taken with the ☿☿ in two very populous nests. So aberrant is the structure of this insect that if it had not been taken with the ☿☿, one might have regarded it as the type of a new genus. As the ☿☿ were all of one kind, I am not disposed to regard these ♀♀ as parasitic forms analogous to such a species as *Bothriomyrmex meridionalis,* which is parasitic on *Tapinoma erraticum.* Type in my collection.

Monomorium tchelichofi, Forel, var. excelsior, n. v.

☿, 3·2–3·5 mm. Smaller than the type of the species, and differing from it as follows:—

The feeble sculpture present in the type on the head, pronotum and petiole is almost entirely effaced, and the surface is therefore much more shining. The mesonotum and epinotum are also much more superficially reticulate. The head is narrower, its sides less convex, the hind margin more deeply emarginate, distinctly narrower behind than in front. Antennae blackish brown, not reddish brown as in the type of the species, the joints of the flagellum more slender. The dorsum of the epinotum is narrower, or twice as long as wide, less widened behind than in the type, and also much more shallowly excavated. Nodes of the petiole narrower, the upper edge of the 1st node less rounded from front to back.

♂, 6·6 mm. Black; flagellum reddish brown, tarsi brown, articulations of the femora and tibiae reddish ochreous, apical margins of the abdominal segments brownish yellow. Head, thorax and petiole dull. closely reticulate-punctate, fairly strongly so on the head and mesonotum, very finely on the petiole. Abdomen moderately shining, microscopically reticulate, sparsely and shallowly punctured, the punctures bearing pubescent hairs. A few short rugae radiate outwards from the ocelli, and there is a slight rugosity at the base of the mesonotum. Abdomen and legs with a sparse and decumbent pubescence, absent elsewhere. Pilosity yellowish and sparse everywhere. Scapes very thick and much swollen in their apical halves, two and a quarter times longer than their apical width; flagellum densely punctured and pubescent, all the joints, except the last two, swollen in the middle; the 2nd joint nearly half as long again as the 3rd. Median area of clypeus quadrate, feebly convex or nearly flat. Mandibles shining, with 3 or 4 teeth. Eyes very slightly convex, occupying the middle third of the sides. Dorsum of epinotum very short, merging gradually into the declivity. The upper half of the declivity is reticulate-punctate and dull, concave transversely and subvertical, the lower half is vertical, smooth and shining. First node, seen from above, one and two-thirds as wide as long, the upper face shallowly emarginate; 2nd node a little wider than the 1st, two and a half times wider than long, convex from front to back, feebly concave transversely. Abdomen subglobose, a little longer than wide, very convex above, much more robust than usual in this genus. Wings hyaline, tinged with yellow in front, the costal and subcostal nervures dark brown. Quite distinct from all the other known ♂♂ of our S. African species in the structure of the flagellum.

Matroosberg, Hex River Mts., 5500–7000 feet. (R. W. E. Tucker.)

(S.A.M., R.M., G.A., colls. Type in my collection.)

MONOMORIUM HAVILANDI, Forel.

Page 216. According to Santschi, this is a race of *australe*, Emery; he separates the latter from *salamonis*, L., and places it as a distinct species under the sub-genus *Paraholcomyrmex.* (Ann. Soc. Ent. France, vol. 85, p. 282, 1916.)

MONOMORIUM SALAMONIS, Linn., var. DISERTA, Forel.

Page 221. This should be regarded as a variety of the race *termitarium* rather than of the type of the species. (Forel, Rev. Suisse Zool., vol. 24, p. 417, 1916.)

Race AUSTRALE, Forel.

Page 225. The form described under this title was so determined for me by Dr. Forel. It is, however, quite different from Emery's race, and I therefore propose for it the name *ocellatum* (race of *salamonis*). Dr. Santschi has given the following description of the true *australe*, but based chiefly on its race *Havilandi*, (see Ann. Soc. Ent. France, vol. 85, p. 283, 1916) :—

"☿ major, 2·5 mm. Reddish brown, abdomen black, slightly brownish at its base. Mandibles, clypeus, sides of the mesonotum and lower surface of the petiole reddish ochreous. Cheeks, frontal carinae and antennal pits finely striated, the rest of the head smooth, with a fairly strong but sparse puncturation. Thorax and petiole densely reticulate-punctate as in *M. salamonis* (this sculpture is more or less effaced on the promesonotum, which may be smooth and shining). Abdomen and legs smooth. Pilosity erect and yellowish, fairly abundant on the abdomen, sparser on the thorax and head. The legs and antennae have only a decumbent pubescence, which is also present on the head, and more sparsely on the body. Head a little longer than wide, the sides feebly convex, the hind margin widely concave. The head is generally wider in front than behind, but it becomes rapidly as wide in front as behind in the smaller individuals, in which it appears relatively narrower. The eyes, placed between the anterior third and the middle of the sides, are fairly flat; their long diameter is as long as the distance between them and the anterior angles of the head. Clypeus entire, strongly concave between its two carinae, which are widely separated, almost contiguous with the frontal carinae and continued at the sides into the anterior margin. Mandibles striate, 3-dentate. The scape does not quite reach the hind margin of the head. Third to 8th joints of the flagellum wider than long. The club not very thick, its 2nd joint only a little wider and nearly as long as the preceding joint. Promesonotum convex, without distinct sutures on its dorsum. The emargination of the profile of the thorax a little weaker than in *gracillimum* (much the same as in *salamonis subopacum*, which this species resembles fairly closely in the shape of the thorax and petiole). Epinotum a little convex, passing by a gradual curve from the dorsum into the declivity. First node cuneiform, rounded above, convex below as in *minutum*, the peduncle in front shorter than the node, bearing below, near the posterior articulation, a small and obtuse tooth. Second node small, lower than the 1st, wider than long. Abdomen oval, narrower in front.

☿ media, 2–2·1 mm. The head elongate rectangular, the sides more parallel, with a more or less superficial reticulation on the occiput which may extend as far as the striae. The two faces of the epinotum are more distinct and more marginate.

☿ minima, (= var. *laeviceps*, Emery). The head is smooth and shining as in the ☿ major, narrower than in the ☿ media, but slightly wider behind the eyes, concave behind, the epinotum almost as much rounded as in the ☿ major, the sculpture of the thorax hardly more feeble, the joints of the flagellum a little shorter.

♀, 4·5–5 mm. The head is entirely dull, as also the 1st abdominal segment which is sculptured like the petiole. Otherwise as in *Havilandi*, Forel."

Prieska, Cape Prov., (Dr. Peringuey).

MONOMORIUM ALBOPILOSUM, Emery, race PAUCIPILOSUM, Santschi.

Rev. Zool. Afr., vol. 6, p. 235, ☿, 1919.

☿, 3·2–3·5 mm. Reddish brown, the head a little darker, abdomen brown. More feebly sculptured than the type of the species, and more shining. Pilosity as in the type of the species but much scantier, especially on the head and thorax. Posterior angles of the head slightly more rounded. First node of the petiole more conical, the apex less rounded.

Natal, (*leg.* Haviland), *ex* Natal Mus. coll.
(R.M., G.A. colls.)

Var. CLARITHORAX, Santschi.

Loc. cit., p. 235.

In my opinion this is only a discoloured form of the type of the species, the colour having been lost owing to the long immersion in alcohol. (*leg.* Haviland, Natal, 1894.)

M. salamonis, race *Junodi*, var. *opacior*, Forel. Santschi (*loc. cit.*, p. 235) expresses the opinion that the species described in this monograph on page 220 is too large to agree with *opacior*. However, it is to be remarked that these specimens were named for me by Dr. Forel himself. The size varies between 2·8 and 3·4 mm., and the larger specimens cannot be referred to the var. *notula* of *setuliferum* as suggested by Santschi. The var. *notula* has a shorter head and a differently shaped thorax.

Monomorium lene, Santschi.

Ann. S. E. Belg., vol. 60, p. 11, ☿, 1920.

☿, 1·2–2·2 mm. Pale ochreous, the head and apex of abdomen slightly fuscous ochreous. Smooth and shining. Pilosity pale yellowish, long, and not abundant. Head, legs, and antennae sparsely pubescent. Head, including the mandibles, about one-fourth longer than wide, the sides feebly convex, the posterior margin shallowly concave (not straight as stated in Santschi's description). Median area of clypeus longer than wide in front, distinctly bicarinate, the anterior margin almost straight. Frontal carinae very short. The scape falls short of the occipital margin by nearly twice the length of the 1st joint of the flagellum. The 2nd joint of the latter is as long as wide, the 3rd–7th wider than long. Promesonotum moderately convex, the promesonotal suture obsolete above, the mesoepinotal suture deep. Dorsum of epinotum fairly flat lengthwise, moderately convex transversely, about one-third longer than wide, fully half as long again as the declivity. In profile, the dorsum and declivity form a continuous curve. First node of petiole subconical, higher than long below, one-third longer than its peduncle, rounded above. Second node lower than, and not wider than the 1st, transversely oval, about one-third wider than long.

Salisbury, S. R. (*leg* R. W. Tucker), *ex.* S. A. Mus. coll.
(S.A.M., R.M., G.A. colls.) Type in coll. Santschi.

Monomorium (lampromyrmex) rotundatum, Santschi.

Loc. cit., p. 14, ☿.

"☿, 1·5–1·6 mm. Slightly brownish yellow. The abdomen slightly fuscous at the sides and apex. Smooth and shining. Erect pilosity very sparse. A moderate pubescence on the legs and antennae, rare on the body. Head nearly one-fourth longer than wide, the sides feebly convex, the posterior margin straight, with the angles very rounded. Eyes in the anterior third of the head, their diameter is a little greater than half their distance from the base of the mandibles. Clypeus moderately produced, with the carina and anterior margin rounded. Mandibles smooth, 4-dentate. The scape falls short of the posterior margin of the head by a length equal to one and a half times its thickness. Second to 7th joints of the flagellum wider than long, the 8th a little shorter and decidedly wider than the 9th, which is a little longer than its apical width. Promesonotum convex, the mesoepinotal suture deep. The two faces of the epinotum form a strong convexity. First node of the petiole one-third longer than high, rounded at the summit, twice as long as its peduncle. Second node globose, as wide as the 1st, a little wider than long.

Durban, Natal, (H. B. Marley, *leg.*); received from G. Arnold under the name of *atomus*, race *mictilis*, Forel. The latter is much less convex, its 1st node smaller and more conical, the colour paler and the scapes shorter." Type in coll., Santschi.

M. AMBLYOPS, race BULAWAYENSE, Forel.

Page 236. The name of this race should be altered to *Prossae* Forel, since the name *bulawayensis* has already been used for another form in the genus (Forel, *loc. cit.*, p. 418).

Page 238, sub-genus *Mitara*. The author of this sub-genus is Emery, not Forel.

SUB-TRIBE SOLENOPSIDINI.

SOLENOPSIS ZAMBESIAE, n. sp.

☿, 2 mm. (minor ?). Straw-yellow, the head and promesonotum a little darker and more ochreous. Moderately shining. Similar to the ☿ minor of *S. punctaticeps*, Mayr, from which it differs as follows. Head and anterior half or two-thirds of the promesonotum densely punctured with large and deep punctures (in *punctaticeps* the promesonotum is finely and very sparsely punctured). Head and promesonotum with a very short, dense, erect and yellowish pubescence, the rest of the body with a sparser pubescence intermixed with longer and oblique hairs, which are, however, much shorter than in *punctaticeps*. The thorax is more elongate than in that species, and the promesonotum is distinctly flattened above and less convex-sided. The mesoepinotal constriction is much stronger, and the

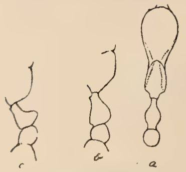

FIG. 66.
a and *b*, *S. zambesiae*, n. sp.
c, *S. punctaticeps*. ☿ mi.

suture consequently narrower. The dorsum of the epinotum is narrower at the base than in *punctaticeps*, and the declivity is less oblique, more distinctly delimited from the dorsum, which it equals in length. The 1st node of the petiole is longer and rounder above, and its anterior face is oblique, not vertical. The promesonotum is one-third longer than wide (barely one-quarter in *punctaticeps*). The eyes are smaller. The anterior margin of the median area of the clypeus is furnished with a small tooth on each side, but the exterior pair of teeth, which are present in *punctaticeps*, are entirely wanting. Otherwise exactly like *punctaticeps*.

Rain Forest, Victoria Falls. 2 ☿☿ under damp bark.

Type in my collection.

SOLENOPSIS SEMILAEVIS, Mayr.

Page 247. Dr. Santschi refers this species to the genus *Aeromyrma*, see following paragraph.

TRIBE PHEIDOLOGETINI.

AEROMYRMA TRAEGAORDHI, Santschi.

Page 257. In the Ann. Soc. Ent. France, vol. 85, p. 285, 1916, Dr. Santschi placed this insect in synonymy with *Aeromyrma* (*Solenopsis*) *semilaeve*, Mayr, adopting the opinion of Emery. However, in the Bull. Soc. Vaud. Sc. Nat., vol. 52, p. 338, 1919, he reverts to his original view and considers that *Traegaordhi* is to be regarded as a distinct species.

In the same paper that author has described several new forms of *Oligomyrmex*. As it is exceedingly difficult to appreciate the details of structure in these very minute insects without making transparent balsam mounts, and as I have not sufficient specimens of all the species to spare for that purpose, it seems preferable to copy Santschi's own descriptions, rather than to draw up new ones myself.

All the species which I have seen in life have been found under stones or logs, or under the bark of fallen and decayed trees, in very moist situations. They are all strongly photophobic, and, considering their size, very quick in their movements. The soldier caste does not appear to be of much importance in the economy of the species, as it is rarely that more than two or three can be found in a nest.

It should be noted that *Aeromyrma* was erected as a genus distinct from *Oligomyrmex* on account of having 10-jointed antennae instead of the 9 which is found in the latter genus. However, since it has been found that *O. debilis*, Santschi, has a ♃ with 10-, and a ☿ with 9-jointed antennae, Emery has sunk *Aeromyrma* to the rank of a sub-genus of *Oligomyrmex.* (Rend. Acc. Sc. Bologna, p. 59, 1914–5.)

OLIGOMYRMEX (S.G. AEROMYRMA) NANUS, Santschi.

Bull. Soc. Vaud. Sc. Nat., vol. 52, p. 338, ♃, ☿, 1919.

"☿, 1·2 mm. Dirty yellow, smooth and shining. Mesopleurae, epinotum and petiole reticulate-punctate, the upper surface of the nodes much more feebly so. Pilosity fine, short, more or less curved, more abundant and shorter on the head than elsewhere, scantier on the appendages. Head one-seventh longer than wide, the sides fairly convex, the posterior margin straight or feebly concave. Eyes atrophied or absent, placed in the anterior third. Frontal carinae short, very divergent. Mandibles with 4 or 5 teeth. The scape extends back to the posterior fourth of the head. Third to 6th joints of the flagellum more than twice as wide as long, the last joint of the club as long as the rest of the flagellum. Promesonotum ovoid, fairly convex, the suture effaced above. Mesoepinotal suture deep. Dorsum of epinotum slightly convex, submarginate, as long as the declivity, together forming a rounded angle. Declivity more or less marginate at the sides. First segment of petiole as long as high, the node low and rounded above. Second node transversely oval, a little more than one-third wider than long and equally wider than the 1st.

♃. Thorax and abdomen of a more brownish yellow than in the ☿. The appendages paler, smooth and shining, except the mesopleurae, epinotum, the 1st node and sides of the 2nd, which are reticulate. Promesonotum, excluding the neck, pyriform, a little longer than wide. The suture fairly distinct above. The promesonotum is strongly convex, whereas the mesonotum has a fairly rectilinear profile which is continued into the dorsum of the epinotum. Mesoepinotal suture feeble. Epinotum marginate, the dorsum wider in front, as long as wide behind, and as long as the declivity. First segment of petiole longer than high, the node rounded. Second segment of petiole transversely oval, twice as wide as long and two-fifths wider than the 1st. (My unique example of the ♃ lacks the head.)"

Amatongas Forest, P.E.A. (Arnold *leg.*)

The head of the ♃ is a little more than one-third longer than wide, parallel-sided, the posterior angles rounded, the occipital margin widely but shallowly concave, margined above by a weak and transverse carina. The anterior third of the head, except the median area of the clypeus, is longitudinally striate, strongly so at the sides, the striae curved outwards around the antennal sockets. The median area of the clypeus is vertical in front, its anterior margin feebly concave. The frontal carinae widely divergent, not extending beyond the anterior fifth of the head. The scapes do not extend back to the middle of the head. Eyes absent. Type in coll., Santschi.

O. (s.g. AEROMYRMA) INCERTUS, Santschi.

Loc. cit., p. 340, ☿.

"☿, 1·2 mm. Dark yellow, (reddish ochreous, the abdomen somewhat brownish, G.A.), terminal margin of the mandibles and a cloud on the abdomen brownish yellow. Shining, smooth, excepting a few striae on the cheeks ; mesonotum, epinotum and the nodes reticulate and somewhat dull. Pilosity fine, short and sparsely distributed on the body, shorter and closer on the head, visible on the limbs. Head a full fifth longer than wide, the sides fairly convex, a little narrower in front than behind, the posterior margin straight. The eyes consist merely of a pigmented spot placed at the middle of the sides. The frontal carinae reach the anterior third of the head. The fairly abrupt clypeus has a long, rounded lobe, not much produced. Mandibles 4-dentate. The scape reaches the posterior fourth of the head. The promesonotum forms a disc as wide as long and evenly convex. Meso-epinotal suture fairly deep and striate. Dorsum of epinotum slightly convex, as long as the declivity, their junction forming a rounded angle. The declivity is marginate, but without raised lamellar ridges. The 1st node of the petiole is much more acuminate at the summit than in the other species. The 2nd node transversely oval, half as wide again as the 1st."

Hillside, Bulawayo, under a stone. Type in coll., Santschi. (G.A. coll.).

O. (s.g. AEROMYRMA) ARNOLDIELLA, Santschi.

Loc. cit., p. 340, ☿, ♃.

"☿. 1–1·2 mm. Concolorous, dull yellow, smooth and shining. Epinotum, mesopleurae and sides of the petiole feebly reticulate. Pilosity shorter than in the ♃. Head one-eighth longer than wide, the sides convex, the posterior margin barely concave. Eyes absent. The scape reaches back to about the posterior fourth of the head. Clypeus bicarinate, produced in the middle into a lobe, lightly excised. Promesonotum much longer than wide, the suture almost obsolete above, more distinct at the sides. The dorsum of the epinotum barely convex, wider behind, and hardly shorter than the declivity ; the latter is barely marginate. First segment of the petiole short, the node fairly angular but less acuminate at the summit than in *incertus*. Second node one-third wider than long, twice as wide as the 1st.

♃. 2 mm. Head yellowish brown, limbs and abdomen of a slightly brownish yellow. Thorax of a colour intermediate, but darker in front. Head striate, more strongly so in front, with large scattered punctures; the frons, middle of clypeus, mandibles (a few striae at their base), the dorsum of the pronotum, of the 2nd node and of the abdomen, smooth and shining. Epinotum, mesopleurae and rest of the petiole reticulate-punctate. Pilosity fine, curved, fairly abundant, especially on the head, where it is only half as long as on the body.

Head rectangular, nearly one-fourth longer than wide, the angles well defined, the sides feebly arcuate, the posterior margin straight. Eyes indistinct. The frontal carinae extend to the anterior third of the head. Frontal area deep. Clypeus with two smoothed carinae diverging towards the angles of a slight lobe which occupies the middle third of the anterior margin. Mandibles with 5 teeth. The scape hardly reaches the middle of the sides of the head. Thorax much shorter than the head. Promesonotum as wide as long and moderately convex; the promesonotal suture obsolete above. Mesoepinotal suture fairly deep. Dorsum of epinotum feebly convex, shorter than the declivity, with which it forms a rounded angle. First segment of petiole as long as high, its node with a rounded summit and conical profile, the peduncle short. Second node transversely oval, nearly twice as wide as long and twice as wide as the first."

Natal. (Haviland *leg.*), *ex* Natal Mus. coll. Type in coll. Santschi.

O. (s-g. AEROMYRMA) SEMILAEVE, Mayr.

(*Solenopsis*) Mayr, Ann. K.K.N.H. Mus. Wien, vol. 16, p. 15, ☿, 1901.
(*O. Hewitti*) Santschi, *loc. cit.*, p. 341, ☿, ♃.

"♃, 2·2 mm. Reddish yellow, slightly brownish; abdomen and more particularly the head, darker. Limbs of a pale brownish yellow. Pilosity exserted, curved, of variable length, fairly abundant all over, shorter on the head, where it merges into pubescence. Pubescence occurs chiefly on the legs and antennae. Head striate in front, transversely towards the posterior margin, with the angles reticulate rather than striate. The clypeus, a small frontal space and the mandibles remain smooth and shining. Dorsum of the promesonotum and of abdomen smooth, sparsely punctured, the sides of the petiole more closely so. Epinotum and mesopleurae reticulate punctate. There is a plexus of fine striae on the sides of the mesonotum and front of the pronotum. Head rectangular, a little wider in front than behind, nearly one-fourth longer than wide, the sides nearly straight, the posterior margin hardly concave, the angles widely rounded. The eyes, very mediocre and feebly convex, are placed in the anterior third of the sides. Antennae 10-jointed, the scape not reaching the anterior third of the head. Frontal carinae fairly distant, furnished with raised lobes which cover the antennal sockets. Clypeus smooth in the middle, striate at the sides, moderately lobate in front and feebly excised in the middle. Behind it projects widely between the frontal carinae ; the latter are continued along it in front as two feeble and convergent carinae. Frontal area deeply impressed. Mandibles smooth, with 5 or 6 teeth. Promesonotum globose, the suture indistinct above. Mesoepinotal suture not deep above, more marked at the sides. Epinotum deeply channelled from its base to the apex. The floor of this excavation is a little convex from back to front, but its walls are raised and form in profile a subdentate angle, whence the dorsum of the epinotum appears a little longer than the declivity. First segment of the petiole as high as long, the node rounded at the summit, its anterior face longer than the peduncle, the latter with a small tooth below. Seen from above, the summit of the node appears more than twice as wide as long. Second node transversely oval, one and two-thirds wider than long. Abdomen excavated at the base."

Grahamstown, C.P., (Hewitt *leg.*), *ex* Albany Mus. coll. ; taken with the ☿☿. (The latter is described on p. 247 of this monograph.)

O. (Aeromyrma) lucidus, Santschi.

Ann. Soc. Ent. France, vol. 85, p. 284, ☿, 1916.

"☿, 1·2 mm. Yellow, shining, with a fine scattered puncturation and a few striae in the metathoracic suture. The pubescence is very fine, fairly outstanding and fairly abundant everywhere ; a few longer hairs round the mouth and on the abdomen. Head rectangular, a little more than one-fourth longer than wide, the sides slightly convex, the posterior margin straight. The eyes, atrophied or reduced to a merely pigmented spot, are placed at the second 5th of the sides of the head. Frontal carinae sinuate, very divergent posteriorly. Clypeus convex, the anterior margin feebly arcuate in its middle third, separated from the outer thirds by a very slight and wide based prominence. Mandibles with 5 brownish teeth. Second to 7th joints of the flagellum much wider than long, the 8th (1st of the club) almost as wide as long, the last joint as long as the seven preceding joints united. The promesonotum in profile forms a regular curve less marked than in *O. semilaevis*, Mayr, and *O. nossidambo*, Forel. The mesoepinotal suture is less deep. Promesonotal suture distinct on the sides of the thorax, obsolete on the dorsum. Dorsum of epinotum half as wide again as long, convex, merging into the longer declivity. The sides have a margin which appears to prolong the profile of the dorsum, making it appear as long as the declivity. Its angles are distinct, but not dentate. The 1st joint of the petiole is as high as long, lower than in *semilaevis*, Mayr. The summit is rounded and the two faces equally oblique. Second joint of the petiole one-third wider than long, almost one-half longer than the 1st. Abdomen nearly twice as long as wide, truncate at the base.

Bunthorne Mine, Bulawayo, 1 specimen. It is perhaps the ☿ of *A. africana*, Forel, of which only the ♃ is known."

Aneleus perpusillus, Emery, race Arnoldi, Forel.

♀, (hitherto undescribed), 3·8 mm. Colour slightly darker than in the ♃, but like that caste in the shape of the head, the sculpture and the pubescence. Head three-sevenths longer than wide, parallel-sided. Scapes longer than in the ♃, extending back as far as the level of the posterior margin of the eyes. The eyes fairly large, occupying one-fifth of the sides and placed in the middle ; ocelli not small, placed close to the occipital transverse carina. Pronotum vertical in front, moderately exposed above, the shoulders marginate, subrectangular, transversely rugose. Mesonotum smooth and shining, very sparsely punctured, about one-third longer than wide, moderately convex transversely, nearly flat lengthwise. Scutellum subcircular, on the same level as the mesonotum. Epinotum armed with two transversely compressed and triangular teeth, directed outwards and slightly downwards ; dorsum of epinotum concave transversely between the teeth, the vertical declivity about as long as the dorsum. Second node of petiole one and three-quarter times wider than long, produced at the sides inferiorly into flat or laminate obtuse angles. Abdomen almost twice as long as wide, as long as the thorax and petiole together, the 1st segment as long as the remaining segments taken together, parallel-sided. Deälated. Otherwise like the ♃.

Taken with ♃♃ and ☿☿ in a populous nest under a stone. Bulawayo.

Type in my collection.

TRIBE MYRMICARIINI.

MYRMICARIA STRIATA, Stitz, race PILOSA, n. st.

☿, 6–6·3 mm. Smaller and darker than the type of the species. Mandibles and scapes very dark reddish brown, the tip of the last joint of the flagellum ferruginous, the rest of the body black.

Pilosity longer and much more abundant than in the type of the species, especially on the thorax and abdomen, the hairs black. The sculpture on the head is similar to that of the type, but the rugae are stronger and a great deal more prominent. The promesonotum has a strong median carina and 4 or 5 longitudinal rugae on each side of same, and 2 or 3 transverse rugae on the anterior margin. The base of the abdomen is microscopically coriaceous and dull. The promesonotum is relatively wider than in the type of the species, a little wider across the anterior angles than long in the middle: the promesonotal suture clearly defined on the dorsum. The epinotal spines are horizontal and parallel, a little longer and distinctly thinner at the base than in the type species. The peduncle of the 1st joint of the petiole is thinner and longer, straight when seen from the side, not arcuate near the base as in the type of the species. Otherwise like the latter.

Amatongas Forest, Portuguese E.A. Common over all the Forest. (S.A.M., R.M., G.A. colls. Type in my collection.)

Race PILOSA, var. PALLIDA, n. v.

☿, 4·9–5·2 mm. Castaneous brown, abdomen, legs and scapes paler or raw umber. Pilosity brown, as long as in the type of the race but not so coarse and bristly. The longitudinal striae on the head more numerous than in the type of the race, and extending unbroken as far as the occipital foramen (in the race some are anastomosed). The scapes are only superficially striate. The dorsum of the epinotum narrower than in the type of the race, its lateral margins or carinae more distinctly angulated outwards than in either the race or the type of the species. The 1st node of the petiole is distinctly narrower, and hardly wider than the 2nd node (very clearly wider in the types of the race and of the species); its peduncle is also relatively shorter. Otherwise like the type of the race.

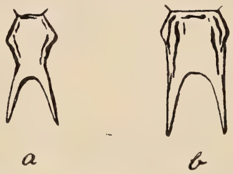

FIG. 67.
Dorsum of epinotum.
a, var. *pallida*;
b, race, *pilosa*.

Much smaller than the race or species, and differing from both also in the much shorter scapes, which extend beyond the hind margin of the head by barely as much as the apical width of the scape, (by at least two and a half times the apical width in the species and race).

Natal, 5300 ft., (Haviland), *ex* Natal Museum Coll.

(S.A.M., R.M., G.A. colls. Type in my collection.)

Race PILOSA, var. ANGUSTITHORAX, n. v.

☿, 6 mm. Piceous, mandibles, thorax and peduncle of petiole reddish dark brown. This variety differs from the type of the race as follows. The striae on the middle of the back of the vertex are almost obsolete. The longitudinal striae on the pronotum are wider apart, the three middle ones strongest, the space between them shining. Base of abdomen smooth and shining, not reticulate and dull as in the race. The posterior margin of the head is moderately convex, nearly straight in the race. The eyes are decidedly more prominent and placed farther back, their distance from the hind margin being equal to about their long diameter, (in the race fully one and a half times their long diameter). The basal lateral lobes of the epinotum are much less produced outwardly, the dorsum of the epinotum being almost parallel-sided and longer than wide, whereas in the race the base of the dorsum is distinctly angulated outwards on each side and is as wide there as long in the middle. Seen in profile, in race *pilosa* the dorsum of the epinotum slopes downwards from the mesoepinotal suture to the apex of the spines, whereas in the variety it is horizontal or directed slightly upwards. The promesonotal suture is obsolete (distinct in the race). The nodes of the petiole are narrower, the 1st, seen from above, being fully one-third longer than wide, (as long as wide in the race).

Sawmills, Umgusa River, S.R.

Type in my collection.

MYRMICARIA BAUMI, Forel.

This species, the largest of the genus, also occurs at Sawmills. The nest is large and placed in sandy soil, the galleries extending fully 18 inches below the surface.

TRIBE TETRAMORIINI.

Genus TETRAMORIUM.

Since the publication of Part 3 of this work, several new forms have been discovered, necessitating a complete revision of the key to the species. More especially is this the case in the *quadrispinosum* and *sericeiventre* group.

The form previously described on page 278 as *Blochmanni*, race *continentis*, Forel, although so determined by Dr. Forel himself, cannot be identified with that race; in addition, the discovery of several intermediate varieties from many parts of the African region has made it possible for Dr. Santschi to revise the classification of the group, (Bull. Soc. Hist. Nat. Afrique du Nord, vol. 9, pp. 121–132, 1918). This revision is valuable, especially in emphasising the close relationship between *quadrispinosum* and *sericeiventre*, which are indeed no more than the extremes of one species, characterised by the gradual elimination, or addition, of sculpture. In some cases it is therefore almost a matter of personal opinion as to whether a form should be attached as a race or variety to either one or the other of those extremes. On the other hand, it seems to me that Santschi has placed too much reliance on the nature of the fine sculpture of the abdomen. The effect of this sculpture, due to an exceedingly delicate and microscopic striolation, is plainly appreciable under a low-power, giving the integument a dull silky gloss, but the direction of the fine striae, whether transverse or longitudinal, cannot as a rule be determined with a magnification of much less than 60 diameters.

T. Bequaerti, Forel, and *T. Gladstonei*, Forel, are two other species which are closely attached to the *quadrispinosum-sericeiventre* group.

The form described on page 278 as *continentis* should be transferred to *sericeiventre*, Emery, as the var. *Vascoi*, Santschi. The form *Gamaii*, Santschi, being the commonest form in S. Rhodesia, has been used in the following description as a basis for comparison with the others.

Key to the ☿☿ of Tetramorium (s. str.), revised.

(22) 1. First node of petiole more or less squamiform.

(3) 2. ,, ,, ,, strongly and transversely striate; large species, 4·5–5 mm. long. . . *grandinode*, Santschi, var. *hopensis*, For.

(2) 3. First node of petiole smooth; smaller species, less than 4 mm. long.

(5) 4. Head longitudinally, sharply and evenly striate; the striae continuous from the anterior to the posterior margin; posterior margin of clypeus not defined . . . . . *repentinum*, Arnold.

(4) 5. Head otherwise sculptured.

(9) 6. Pronotum or promesonotum in part smooth, the sculpture of the thorax not coarse.

(8) 7. Pronotum, except in front, smooth and very shining; clypeus carinate; epinotal spines shorter than the space between them *matopoensis*, Arnold.

(7) 8. Promesonotum partially smooth; clypeus not carinate; epinotal spines as long as the space between them . . *Titus*, Forel.

(6) 9. Promesonotum coarsely rugose.

(15) 10. First node of petiole, seen from behind, clearly wider than high.

(12) 11. Body with a long, coarse and fairly abundant pilosity; 1st node, seen from behind, narrower above than below, irregularly hexagonal in outline, each angle ending in a hair . . *umtaliensis*, Arnold.

(11) 12. Pilosity short, fine and scanty. 1st node, seen from behind as wide above as below.

(14) 13. Sides of 2nd node, seen from above, subangular; head and thorax reddish brown . . . *squaminode*, Santschi, race *do* Forel.

(13) 14. Sides of 2nd node, seen from above, rounded or straight; head, thorax and petiole reddish yellow . . *squaminode*, var. *flaviceps*, Arnold.

(10) 15. First node of petiole, seen from behind, as high as, or higher than wide.

(17) 16. Colour pale ochreous; posterior face of 1st node distinctly convex from above to below; 2·7 mm. long . . *jejunum*, Arnold.

(16) 17. Colour reddish brown; posterior face of 1st node almost flat.

(19) 18. Head and thorax longitudinally striato-rugose, with distinct anastomoses between the striae . . . . . *Akermani*, Arnold.

(18) 19. The head, or head and thorax longitudinally striate, without anastomoses.

(21) 20. Second node twice as wide as long . *Akermani*, var. *frigidum*, Arnold.

(20) 21. ,, ,, one and a half times wider than long *Akermani*, var. *drakensbergensis*, Arnold.

(1) 22. First node of petiole not squamiform.

(28) 23. Eyes very small, composed of not more than two or three facets.

(25) 24. Head longer than wide, parallel-sided, hardly wider than the prothorax *Warreni*, Arnold.

(24) 25. Head as wide as, or wider than long, convex-sided, wider than the prothorax.

(27) 26. First node of petiole considerably narrowed in front; seen from above the anterior margin acutely convex or semi-elliptical *subcoecum*, Forel, var. *inscia*, Forel.

(26) 27. First node not much narrower in front than behind; seen from above, the anterior margin is only moderately convex. *Traegaordhi*, Santschi.

(23) 28. Eyes not very small, composed of many facets.

(76) 29. The scapes extend back as far as, or beyond the occipital margin.

(35) 30. Promesonotum smooth and shining; or with a few rugae, in which case the whole body is pitchy black and shining.

(32) 31. A distinct demiscrobe present; the 1st node of the petiole thin, as wide as long above, the 2nd node fully half as wide again as the 1st. *laevithorax*, Emery.

(31) 32. No scrobes; 1st node of petiole thick, longer than wide, the 2nd node hardly one-third wider than the 1st.

(34) 33. Shining, colour entirely pitchy black, the sides and back of the head pitted . . . *quadrispinosum*, Emery, race *Beirae*, Arnold.

(33) 34. Head and thorax ferruginous, head not pitted *quadrispinosum*, race *otaviensis*, Arnold.

(30) 35. Promesonotum sculptured, not very shining.
(37) 36. First node, seen from above, wider than long . . *Frenchi*, Forel.
(36) 37. ,, ,, ,, longer than wide, or at least as long as wide.
(49) 38. First node coarsely sculptured, rugoso-punctate.
(44) 39. A demiscrobe present.
(43) 40. Frontal carinae almost parallel.
(42) 41. Yellowish red-brown ; sculpture of promesonotum not very coarse *setigerum*, Mayr.
(41) 42. Dark brown, the abdomen black ; sculpture of promesonotum very coarse . . . . . *setigerum*, race *quaerens*, Forel.
(40) 43. Frontal carinae distinctly divergent posteriorly *quaerens*, var. *amatongae*, Arnold.
(39) 44. Scrobes entirely absent.
(48) 45. Clypeus convex transversely ; epinotal spines short, shorter than the space between their bases ; eyes not very large.
(47) 46. Head nearly one-fifth longer than wide . . *Gladstonei*, Forel.
(46) 47. Head nearly one-third longer than wide *Gladstonei*, var. *seposita*, Santschi.
(45) 48. Clypeus flat transversely ; epinotal spines long, longer than the space between their bases ; eyes decidedly large . *longicorne*, Forel.
(38) 49. First node finely sculptured, at least not rugoso-punctate.
(51) 50. Pronotum microscopically reticulate, almost smooth, shining, without striae or rugae . . . . . *quadrispinosum*, Emery.
(50) 51. Pronotum with or without striae and rugae, but at least distinctly reticulate or reticulate-punctate, and usually dull.
(57) 52. Whole abdomen shining, only microscopically reticulate at the extreme base, never striolate nor with a dull silky lustre.
(54) 53. Pilosity scanty on the body, the abdomen almost glabrous *quadrispinosum*, race *eudoxia*, Forel.
(53) 54. Pilosity fairly abundant.
(56) 55. Fundamental reticulation on the posterior half of the head and on the promesonotum distinct, the head only slightly shining *Bequaerti*, Forel, race *bulawayensis*, Forel.
(55) 56. Fundamental reticulation on the head and promesonotum almost effaced, at least the head distinctly shining race *bulawayensis*, var. *Bruni*, Sant,
(52) 57. At least the basal part of the 1st dorsal abdominal segment striolate and duller than the rest of the abdomen.
(67) 58. Whole dorsal surface of 1st abdominal segment, except the sides, sculptured and dull ; the sculpture is a microscopically fine striation, so close as to produce a slight silky lustre.
(64) 59. The striation on the 1st segment longitudinal, resolvable under a magnification of about 65 diameters.
(61) 60. Abdomen of the same colour as the head and thorax, cinnamomeous, rarely darker, entirely dull *sericeiventre*, Emery, race *cinnamomeum*, Arnold.
(60) 61. Abdomen entirely or partially of a colour different from that of the thorax.

(63) 62. Abdomen concolorous, dark brown or piceous; head and thorax castaneous red . . . . *sericeiventre*, var. *Vascoi*, Santschi.

(62) 63. Abdomen dark rusty red on the basal third, the rest piceous; head lighter than the thorax, of a burnt-sienna colour *sericeiventre*, var. *Gamaii*, Santschi.

(59) 64. The direction of the striation on the abdomen not resolvable even with a magnification of 65 diameters.

(66) 65. Bright ferruginous, femora and abdomen blackish, the latter striolate and dull at the base, the rest of the abdomen smooth; 3·4 mm. *sericeiventre*, race *femoratum*, Emery.

(65) 66. Dark burnt-sienna red, the apical half of the abdomen darker or brownish red; 3·7 mm. . *femoratum*, var. *transversa*, Santschi.

(58) 67. Only the basal third of the 1st abdominal segment dull and sculptured.

(69) 68. Base of abdomen simply striolate . *femoratum*, var. *colluta*, Sant.

(68) 69. Base of abdomen distinctly reticulate, with or without a striolation in addition.

(71) 70. Pronotum reticulate, with superimposed rugae which are as wide as the spaces between them *sericeiventre*, race *inversa*, var. *defricta*, Santschi.

(70) 71. Pronotum reticulate, with rugae which are narrower than the spaces between them.

(73) 72. Abdomen reddish brown, the base rusty red; head pitted, the pits fairly large and well defined; 3·5 mm. *sericeiventre*, race *continentis*, Forel.

(72) 73. Abdomen black or piceous, the base hardly, or not at all paler; the pitting of the head shallow.

(75) 74. Pronotum fairly convex, with fairly regular and thick longitudinal rugae . . . . *continentis*, var. *Georgei*, Santschi.

(74) 75. Pronotum flatter, the rugae thinner and less regular *continentis*, var. *Platonis*, Santschi.

(29) 76. The scapes do not extend back as far as the occipital margin.

(80) 77. Pubescent hairs on the body flattened, almost scale-like and closely adpressed.

(79) 78. First node above, nearly twice as wide behind as in front; epinotal spines as long as the space between their bases *setuliferum*, Emery.

(78) 79. First node above, one and a half times as wide behind as in front; epinotal spines shorter than the space between their bases *setuliferum*, race *cluna*, Forel.

(77) 80. Pubescent hairs simple, not scale-like.

(82) 81. Epinotal spines very long, as long as the dorsum of the epinotum *Joffrei*, Forel.

(81) 82. Epinotal spines shorter than the dorsum of the epinotum.

(96) 83. Epinotal spines or teeth distinctly longer than they are wide at the base (or as long, *vexator*).

(89) 84. Pronotum finely striate or rugoso-striate, not reticulate.

(86) 85. First node, seen from the side, cuneiform, with only an anterior vertical and a posterior oblique face . . . . . *vexator*, Arnold.

(85) 86. First node, seen from the side, not cuneiform, with a distinct dorsal, as well as anterior and posterior faces.

(88) 87. Dorsal face of 1st node distinctly longer than wide; colour dark yellowish red . . . . *Popovici*, Forel.

(87) 88. Dorsal face of 1st node as wide as, or a little wider than long; colour pale ochreous . . *capensis*, Mayr, and var. *Braunsi*, Forel.

(84) 89. Pronotum reticulate or sparsely rugose.

(95) 90. Nodes of petiole rugose and dull.

(94) 91. A distinct demiscrobe present; head longer than wide.

(93) 92. Base of abdomen not sculptured . . . . *guineense*, Fab.

(92) 93. Basal two-fifths of abdomen dull and longitudinally striate *Bacchus*, Forel.

(91) 94. No demiscrobes; head as wide as long (basal two-fifths of abdomen longitudinally striate and dull) . . . *Peringueyi*, Arnold.

(90) 95. Nodes of petiole smooth and shining . . . *Grassi*, Emery.

(83) 96. Epinotal spines or teeth not longer than they are wide at the base.

(108) 97. Larger species, not less than 3·5 mm. long.

(103) 98. No trace of scrobes.

(102) 99. Epinotal teeth longer than the episternal; scapes not nearly reaching the occipital margin.

(101) 100. Dorsum of epinotum hardly twice as long as wide at the base, its junction with the oblique sides rounded; the mesoepinotal suture feeble . . . . *solidum*, Emery, var. *signatum*, Em.

(100) 101. Dorsum of epinotum two and a half times longer than wide at the base, marginate laterally, its junction with the vertical sides rectangular; mesoepinotal suture fairly deep *solidum*, var. *Tuckeri*, Arnold.

(99) 102. Epinotal teeth not longer than the episternal; the scapes extend back almost as far as the occipital margin . . . *Jauresi*, Forel.

(98) 103. A more or less distinct demiscrobe present.

(107) 104. Dorsal profile of thorax feebly convex or straight; epinotal teeth distinct.

(106) 105. Larger species, 5 mm. or more; 1st segment of petiole with the peduncle less than half as long as the node . *simulator*, Arnold.

(105) 106. Smaller species, 3·5 mm.; peduncle of 1st segment of petiole as long as the node . . . . . . *lobulicorne*, Santschi.

(104) 107. Dorsal profile of thorax distinctly angulated at the promesonotal junction; epinotal teeth almost obsolete. *Emeryi*, Mayr, race *cristulatum*, Forel.

(97) 108. Smaller species, less than 3·5 mm. long.

(110) 109. Abdomen dull, closely and finely punctured *semireticulatum*, Arnold.

(109) 110. Abdomen shining, not closely punctured, or if so, only at the extreme base.

(124) 111. Epinotal teeth fairly large, at least distinctly larger and longer than the episternal.

(115) 112. Colour of body entirely black, or nearly so.

(114) 113. Scapes, legs and mandibles reddish yellow; thorax in greater part finely reticulate-punctate . . . *argenteopilosum*, Arnold.

(113) 114. Scapes, legs and mandibles blackish; thorax coarsely rugoso-reticulate *oculatum*, Forel.

(112) 115. Colour more or less yellow, yellowish red or dark castaneous red.

(117) 116. Dark castaneous red; pronotum strongly marginate in front, head and thorax very strongly and longitudinally rugose, the rugae prominent . . . . . . *somniculosum*, Arnold.

(116) 117. Yellowish, or yellowish red; pronotum not marginate in front, sculpture of thorax not very coarse.

(119) 118. A complete scrobe present; sutures on dorsum of thorax entirely absent; thorax and nodes microscopically reticulate-punctate and dull . . . . *Arnoldi*, Forel.

(118) 119. Scrobes, if present, not complete; thorax with a fine rugose sculpture.

(121) 120. Second node of petiole as wide as long; a trace of a demiscrobe present. *simillimum*, Smith, var. *shilohensis*, Forel.

(120) 121. Second node wider than long.

(123) 122. Sculpture fine; no trace of a scrobe; 2·2 mm. long *pusillum*, Emery, var. *mossamedensis*, Forel.

(122) 123. Sculpture coarser; a slight trace of a scrobe present; 2·5 mm. long *longoi*, Forel.

(111) 124. Epinotal teeth small, as large as, or smaller than the episternal, or nearly obsolete.

(128) 125. Second node fully half as wide again as the 1st.

(127) 126. Anterior margin of the dorsal face of the 1st node semi-elliptical; epinotal teeth obsolete; colour pale straw-yellow . *incruentatum*, Arnold.

(126) 127. Anterior margin of the dorsal face of the 1st node semi-circular; epinotal teeth distinct; colour reddish ochreous *incruentatum*, var. *luteolum*, Arnold.

(125) 128. Second node much less than half as wide again as the 1st.

(130) 129. First node, seen from the side, subconical; its anterior margin strongly convex; episternal teeth larger than the epinotal *simillimum*, race *isipingense*, Forel.

(129) 130. First node merely slightly convex or even flat in profile, its anterior margin almost straight.

(132) 131. Promesonotum shining, almost smooth *simillimum*, var. *Poweri*, Forel.

(131) 132. ,, dull, distinctly sculptured.

(134) 133. Scrobes entirely absent; the frontal carinae do not extend back beyond the middle of the head . . *pusillum*, race *tablense*, Forel.

(133) 134. Either a trace of a scrobe present, or the frontal carinae extend back nearly as far as the occipital margin.

(136) 135. Dorsum of the epinotum two and a half times longer than the declivity *pusillum*, race *ladismithensis*, Forel.

(135) 136. Dorsum of epinotum less than twice as long as the declivity.

(138) 137. Head slightly shining, not longer than wide; 2·5 mm. long *intextum*, Santschi, var. *cataractae*, Sant.

(137) 138. Head dull, a little longer than wide; 2·2 mm. long *simillimum*, Smith.

T. SERICEIVENTRE, Emery, var. VASCOI, Santschi.

Bull. Soc. Hist. Nat. Afrique du Nord, vol. 9, p. 128, ☿, ♀, 1918.

"☿, 3·6 mm. Yellowish red, abdomen and posterior femora light brown, the rest of the limbs rusty yellow. Sides of the head rugose, reticulate as in var. *arenarium,* Santschi; the rugae on the pronotum are parallel, fine and distant, and are effaced on the mesonotum and epinotum, which are only reticulate-punctate, like the upper surface of the two nodes. Abdomen with silky lustre, finely striolate as in *arenarium.* Head wider behind and with more rounded angles than in *arenarium.* Frontal area wide. Second joint of the flagellum one-fourth longer than wide. Pre-epinotal impression feeble, more so than in *arenarium.* Epinotal spines shorter than the space between them and as long as the episternal."

♀, 5 mm. Bulawayo, S.R. (Arnold *leg.*).

My paratypes of this variety (collected from the same nest as the types which were sent to Santschi) do not agree with the above description. The colour is much darker than stated therein, and I am quite unable to distinguish the least degree of a striolation of the abdomen, which is only microscopically reticulate at the base.

T. SERICEIVENTRE, var. GAMAII, Santschi.

Loc. cit., p. 128, ☿.

☿, 3·5–3·8 mm. Head burnt-sienna brown, distinctly of a paler colour than the thorax and petiole, which are dark castaneous brown. The abdomen is of the same colour as the thorax, except on the basal third, where it is paler and of a burnt-sienna brown, or ferruginous, ("roussâtre," Santschi). The legs and antennae are brownish ochreous, the femora somewhat darker. The head has a few whitish and erect hairs, chiefly on the front, the thorax two or three in front, the nodes of the petiole with two each near their posterior margins, and the abdomen with a few on the apical half, otherwise the insect is nearly glabrous.

The fundamental sculpture of the head, thorax and petiole consists of a fine and close reticulate puncturation. The sides and back of the head have a few rugae superimposed, wider and coarser in front of the eyes, more or less anastomosed or reticulate, leaving round and shallow pit-like areas in between. The space between the frontal carinae and the vertex is longitudinally striate. The clypeus is rugulose and strongly carinate in the middle, the mandibles closely and longitudinally striate and dull. On the dorsum of the thorax there is a superimposed sculpture of rugae, chiefly longitudinal on the pro- and mesonotum, becoming less distinct or effaced towards the posterior half of the mesonotum ; the dorsum of the epinotum with a few more or less transverse rugae. The sculpture is strongest near the anterior border of the pronotum, which is marginate. The sides of the thorax are more or less longitudinally and feebly rugoso-striate. The nodes of the petiole are shallowly pitted, more closely at the margins than in the middle. The 1st segment of the abdomen is microscopically rugulose near the base, longitudinally striolate or aciculate all over. Head quadrate, slightly longer than wide, and a little wider than the prothorax. Mesoepinotal suture wide and shallow, the epinotal teeth a little longer than the episternal, shorter than the distance between their bases. The dorsum of the epinotum, not very clearly delimited from the sides, widens towards the apex and is nearly twice as long as wide at the base. First node of the petiole as wide behind as long, narrowed in front ; 2nd node cupuliform, widest behind, about one-third wider than long and equally wider than the 1st. The whole body dull.

Bulawayo, Gwaai, and Salisbury, S.R.
(S.A.R., R.M., G.A. colls.)

T. SERICEIVENTRE, race INVERSA, Santschi, var. DEFRICTA, Santschi.

(race), Ann. Soc. Ent. France, vol. 78, p. 384, ☿, 1909.

Var., *loc. cit.*, p. 129, ☿.

☿, 3·5–3·6 mm. Head, thorax and petiole pale yellowish ferruginous, the thorax a little darker than the head. The colour much paler than in *Gamaii.* Abdomen brownish black, slightly reddish brown near the base. Head more strongly sculptured than in *Gamaii,* the sides almost as strongly rugoso-reticulate behind as in front, the vertex more distantly and less regularly striate than in *Gamaii.* The dorsum of the thorax, except just between the epinotal teeth, coarsely and chiefly longitudinally rugose, the rugae not much narrower than the spaces between them. The epinotal teeth are as long as the space between their bases, and a little longer than the episternal. Abdomen shining, except the basal third or fourth of the 1st segment which is microscopically reticulate-rugulose, with a faint suggestion of a longitudinal striolation.

♀, 5·2 mm. Head much more strongly sculptured than in the ☿. Mesonotum and scutellum strongly and longitudinally striate, the dorsum of the epinotum transversely striate, the nodes of the petiole reticulate-rugose. The abdomen dull except at the sides; the 1st segment transversely and finely striate at the base, longitudinally striolate elsewhere, the striolae divergent towards the sides. Epinotal teeth not longer than the episternal, barely half as long as the space between their bases. First node of petiole shorter than in the ☿, hardly longer than wide. Wings flavo-hyaline, the nervures ochreous.

Malindi, S.R.; Basutoland and Natal.

(R.M., G.A. colls.)

T. SERICEIVENTRE, race CINNAMOMEUM n. r.

☿, 3·3 mm. Abdomen usually of the same colour as the head and thorax, which is a yellowish red, or cinnamon. Occasionally some individuals from the same nest may have the abdomen a little darker than the rest of the body, but although darker, the colour is of the same kind. The pronotum is more sharply marginate in front, and the sculpture is more distinctly reticulate, the longitudinal rugae being less emphasised than in the type of the species. Epinotal spines shorter, hardly longer than the episternal, and not longer than the interval between their bases. First node of the petiole sharply truncate behind, so that its posterior face is vertical, not oblique as in the type of the species. Abdomen with the same sort of sericeous reflection as in the type of the species.

Amatongas Forest, P.E.A., the nest under a sleeper on the railway; Beira, P.E.A., common. Type in my collection.

(S.A.M., R.M., G.A. colls.)

T. SERICEIVENTRE, race FEMORATUM, Emery,

var. TRANSVERSA, Santschi.

Loc. cit., p. 128, ☿.

☿, 3·7 mm. Dark burnt-sienna red, the head a little paler, the legs paler than the head. Abdomen dark reddish brown, the basal third paler and of the same colour as the petiole. Vertex of head distantly striate; the frontal carinae extend farther backwards than in *Gamaii* and are almost parallel, (distinctly divergent in *Gamaii*). The pro-mesonotum coarsely rugose lengthwise, the dorsum of the epinotum transversely rugose. The sides of the head are less parallel than in *Gamaii*. Nodes of petiole a little narrower than in that variety. Epinotal teeth not longer than the episternal. First segment of abdomen dull, microscopically reticulate-rugulose.

Pretoria. (G.A., coll.) Type in coll. Santschi.

Santschi describes the 1st segment as being finely striolate transversely. With a magnification of 60 diameters in a Zeiss stereoscopic binocular microscope, I fail to see any transverse sculpture ; if anything, there is a faint indication of a longitudinal aciculation.

Race FEMORATUM, var. COLLUTA, Santschi.

Loc. cit., p. 129, ☿.

"☿, 2·6 mm. Dark red, abdomen black, the base slightly brownish. Legs and antennae rusty red. Frontal striae more widely spaced than in *arenarium*, with large punctured interspaces. Sides of the head and the occiput more delicately reticulate-rugose than in that variety. Pronotum with about 7 or 8 irregular and anastomosed rugae. Mesonotum reticulate-rugose, the dorsum of the epinotum and of the nodes reticulate-punctate, the latter also pitted. The middle of the 1st abdominal segment smooth and shining, the base and apical margin finely and transversely striolate. Head a little narrower than in *arenarium* ; the scape extends beyond the hind margin of the head by as much as twice its own apical width. Mesoepinotal suture feeble. Epinotal teeth shorter than the space between them, as long as the episternal. Node of the petiole relatively lower and more elongate than in *arenarium*."

Durban, (F. Demarchi *leg.*).

T. SERICEIVENTRE, race CONTINENTIS, FOREL.

(*T. Blochmanni*, race) Forel, Ann. Soc. Ent. Belg., vol. 54,
p. 426, ☿, 1910.

☿, 3·5 mm. Head and thorax dull, burnt-sienna brown, the posterior half of the thorax and the petiole somewhat darker. Abdomen dark brown, shining, the basal third in the middle dull and microscopically reticulate. The round spaces enclosed between the reticulations on the head are larger and more numerous than in *Gamaii*, occurring also on the posterior half of the median area. The rugae on the prothorax finer and farther apart than in *Gamaii* ; the mesoepinotal suture barely defined. The nodes of the petiole are distinctly narrower than in *Gamaii* ; the 1st is one-third longer than wide behind, and the 2nd is barely wider than long. Episternal teeth as long as the epinotal.

Natal, (Haviland *leg.*), *ex* Natal Mus. coll.

(G.A. coll.)

Race CONTINENTIS, var. PLATONIS, Santschi.

Loc. cit., p. 130, ☿.

"☿, 3–3·2 mm. Red, slightly dark. Antennae and legs rusty red, the femora darker. Abdomen blackish brown, the base somewhat paler. Frontal striae fine, interrupted, reaching the occiput; the rugae on the sides of the head coarser, enclosing large confluent punctures. Rugae on the pronotum irregularly longitudinal, narrower than the spaces between them, but more pronounced than in *continentis* or *eudoxia.* The rest of the thorax and petiole reticulate-punctate, with a few very fine rugae. In addition, large punctate pits occur on the petiole. Abdomen reticulate at the base, with some transverse and longitudinal striolae on the anterior third, with a fine reticulum superimposed. The rest of the abdomen shining. Head slightly shorter and with the angles more rounded than in *arenarium.* The epinotal and episternal teeth subequal. This form differs from race *continentis* by the stronger rugae on the pronotum, which is also flatter and distinctly marginate."

Basutoland, (Wroughton *leg.*).

Race CONTINENTIS, var. GEORGEI, Santschi.

Loc. cit., p. 131, ☿, ♀.

"☿, 3·5 mm. Colour like that of *Platonis,* but the base of the abdomen as dark as the rest of the segment. Sculpture similar to that of *Platonis,* but the space around the antennal sockets is less coarsely rugose. The pits on the posterior angles of the head shallower, the rugae on the pronotum more regular. The nodes are less pitted and the abdomen is smooth, barely finely reticulate at the base, not striolated. Head and antennae as in *continentis,* the pronotum feebly convex, (more so, and less distinctly marginate than in *Platonis*). The epinotal spines are longer and higher than in that variety, from which this one differs also by the more regular and thicker thoracic rugae.

♀, 3·8–5 mm. Sculpture stronger, the dorsum of the abdomen longitudinally striolate, reticulate at the base. Mesonotum and scutellum strongly and regularly striate lengthwise. Epinotal and episternal teeth large, horizontal, subequal. Petiole longer than in the ☿, with a strong prominence on the lower side of the 2nd node. ♂, 4·8 mm. long."

Bulawayo; type in coll. Santschi.

T. QUADRISPINOSUM, Emery, var. EUDOXIA, Forel.

This variety, described on p. 280 as a var. of *continentis*, must like that race be transferred to *quadrispinosum*. The race *elegans*, Santschi, (*loc. cit.*, p. 125), is only a synonym, differing from *eudoxia* type by no more than a slightly paler colour of the head ; it is also derived from the same locality, Willowmore, C.P.

T. QUADRISPINOSUM, race BEIRAE, n. r.

☿, 3·8–4 mm. Pitch black ; antennae and mandibles dark castaneous brown, the tibiae dark brown with the basal third paler or rusty red, tarsi dark brownish ochreous. Shining, the abdomen except at the base, strongly so. The sculpture of the head is similar to that of the type of the species, but the very fine fundamental reticulation is totally absent, (except near the occupital margin), being replaced by a more or less longitudinal rugulosity. The striae on the vertex between the frontal carinae are stronger and more widely spaced. The sides and posterior half of the head are sparsely, but distinctly, pitted. The pits are entirely wanting in the type of the species. The fundamental sculpture of the thorax and petiole is a very fine and superficial reticulation. The shoulders of the pronotum laterally, a round spot on the mesopleurae and the declivity of the epinotum lack this reticulation and are quite smooth. Pronotum with some widely spaced, thin and longitudinal striae, the anterior margin slightly rugose, the dorsum of the epinotum transversely and very superficially striate, the sides of the thorax obliquely striate, the striae fine and irregular. Nodes of petiole a little dull and coriaceous at the sides, sparsely pitted above. Basal 4th of abdomen microscopically reticulate-rugulose and only moderately shining. Legs shining.

Posterior angles of the head less rounded than in the type of the species, the pronotal shoulders more pronounced. Mesoepinotal impression deeper than in the type of the species, the dorsum of the epinotum narrower and less convex transversely, more distinctly delimited from the sides. The epinotal teeth relatively longer, a little longer than the episternal, and directed more upwards. The 1st node is only one-fourth longer than wide, more convex-sided than in the type of the species ; its anterior face is vertical, not oblique and merging gradually into the peduncle as in the type of the species.

This race differs from the type of the species chiefly in the larger size, the black colour, the pitting of the head, and the shape of the 1st node.

Beira, P.E.A. Type in my collection.

(S.A.M., R.M., G.A. colls.)

T. QUADRISPINOSUM, race OTAVIENSIS, n. r.

☿, 3·6–3·8 mm. Head, thorax, petiole and legs pale burnt-sienna red, abdomen dark brown, paler at the base. A long, pale yellowish and outstanding pilosity on the body, fairly sparse. Legs with a long and oblique pubescence. Shining, especially the abdomen. Head with a few longitudinal and interrupted rugae on the sides, widely spaced and without anastomoses. The vertex with a few thin, interrupted striae. Promesonotum smooth. The mesopleurae and sides of the epinotum with oblique, widely spaced and large rugae which are continued transversely over the dorsum of the epinotum. Nodes of petiole with a few superficial striae at the sides. Abdomen smooth. Anterior angles of pronotum widely rounded. Dorsum of epinotum wider than in the type of the species, the epinotal teeth relatively longer and more acute. First node relatively shorter, hardly one-third longer than its peduncle, which is narrower than in the type of the species. Seen from the side, its anterior face is oblique, as in the type of the species, but its junction with the dorsal face is more rounded, and the latter is more convex lengthwise.

Tolerably distinct from the type of the species by its shining integument, loose sculpture and long pilosity.

Otavi, S. W. Africa, (Lightfoot *leg.*). Type in S.A.M. coll.
(S.A.M., G.A. colls.)

T. MICROGYNA, Santschi.

Bull. Soc. Hist. Nat. Afrique du Nord, vol. 9, p. 132, ♀, 1919.

Some confusion has arisen as to the provenance of this insect, probably owing to the specimen having become loosened from its mount during transit through the post. Santschi remarks that it was received with T. *quadrispinosum*, race *elegans*, (=*eudoxia*), and that owing to its size, sculpture, etc., he regards it as a distinct species, probably parasitic. He also says that it comes from Natal, (Haviland *leg.*). This is erroneous, the ☿☿ specimens with which it was sent to Dr. Santschi, and mounted on the same card, being the race *continentis* of *sericeiventre*. In my opinion, it is the female of that race. Possibly owing to its rather unusually small size, (3·5 mm.), the same as that of the worker, one may assume that it exhibits a temporary social parasitism in the founding of its nests, similar to many palaearctic ants with microgynous females.

T. Gladstonei, Forel, var. seposita, Santschi.

Loc. cit., p. 131, ☿.

☿, 3·6–4 mm. Head and thorax of a brighter red colour than in the type of the species. Rugosity of the head and nodes of petiole less coarse than in the type of the species, the dorsum of the epinotum distinctly and transversely rugose. The striation at the base of the abdomen finer. Head plainly narrower, being nearly one-third longer than wide, (a little more than one-fifth in the type of the species), the posterior angles less rounded.

Victoria Falls, Belingwe, Bulawayo, S. Rhodesia.
(S.A.M., R.M., G.A. colls.)

T. bequaerti, Forel, race bruni, Santschi.

Ann. Soc. Ent. France, vol. 85, p. 285, ☿, 1917.

☿, 3 mm. Yellowish red, or pale burnt-sienna, antennae and legs paler, the apical half of the abdomen brown. Posterior half of the head and abdomen shining; thorax above slightly shining, the rest dull. The sculpture is like that of race *bulawayensis* but much more superficial, the posterior half of the head and the vertex between the frontal carinae being almost smooth, or with the striae nearly effaced. Base of abdomen striolate and dull as in *bulawayensis*. The sculpture of the promesonotum is also nearly effaced. The epinotal teeth are fully half as long again as the episternal, (in *bulawayensis* barely longer). Otherwise like race *bulawayensis*.

Hillside, Bulawayo; 1 ☿ in my collection.

Race bruni, var. mashona, n. v.

☿, 3 mm. Darker than the race, and like it with the head and thorax fairly shining. It differs from it and from the type of the species and race *bulawayensis* in having the dorsum of the epinotum strongly and transversely rugose.

Umtali, S.R. Nesting in sandy paths. Type in my collection.
(S.A.M., R.M., G.A. colls.)

T. matopoensis, n. sp.

☿, 2·5 mm. Blackish brown; mandibles, legs and antennae brownish ochreous, the club of the antennae darker. A few outstanding, pale yellowish hairs on the head, thorax and petiole; legs and abdomen with a sparse, decumbent and very short pubescence, very scanty on the abdomen. Pronotum, petiole and abdomen smooth and very shining. Head moderately shining, with a fundamental and exceedingly superficial reticulation, effaced in the middle of the posterior half. The sides of the head are reticulate-rugose, the rugae thin and wide apart; behind the eyes the reticulation closer and finer. The demiscrobe is nearly smooth. The vertex has about 10 interrupted, longitudinal and thin striae. The clypeus is longitudinally striate (about 5 striae) and not carinate. Mandibles smooth and shining, sparsely punctured, armed with 3 teeth in front, indistinctly denticulate behind. Mesonotum and basal half of the dorsum of the epinotum finely striate, the striae wide apart, anastomosed here and there. Sides of thorax superficially reticulate, with a few thin rugae superimposed. Head, excluding the mandibles, a trifle longer than wide, slightly narrower in front than behind, the posterior angles widely rounded, the posterior margin moderately convex. First joint of flagellum a little longer than wide, the 2nd–5th fully twice as wide as long, the 6th a little wider than long. The scapes do not quite reach the occipital margin, the demiscrobes are indistinctly defined below. Eyes convex, fairly prominent, placed at the middle of the sides. Anterior margin of clypeus convex.

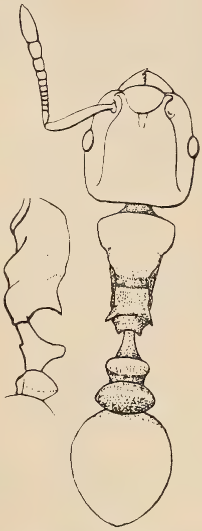

FIG. 68.—*T. matopoensis.*

Promesonotum with fairly distinct but rounded anterior angles; it is very convex transversely and lengthwise, as long as wide in front, narrowed at the promesonotal suture (which is defined only on the sides), and more so at the mesoepinotal suture. The latter is wide and shallow. Dorsum of epinotum quadrate, moderately oblique, about one-fifth wider than long. Epinotal teeth triangular, acute, a little longer than their basal width, a little shorter than the distance between their bases, twice as long as the episternal teeth; the declivity vertical, half as long as the dorsum of the epinotum. First node of the petiole squamiform, the dorsal edge rounded from front to back, higher than long and higher than the 2nd node. Seen from behind, it is slightly narrower below than above, and a little wider than high; 2nd node transversely oval, convex transversely and from front to back, twice as wide as long, and about half as wide again as the 1st. Abdomen subglobose, a little longer than wide. Femora not greatly swollen. In general appearance this species is not unlike *T.* (*Xiphomyrmex*) *Humbloti*, Forel, but it is a true Tetramorium with 12-jointed antennae.

Mt. Bambata, Matopos, S.R., 4800 feet. Under moss and dead leaves.

Type in my collection.

Tetramorium umtaliensis, n. sp.

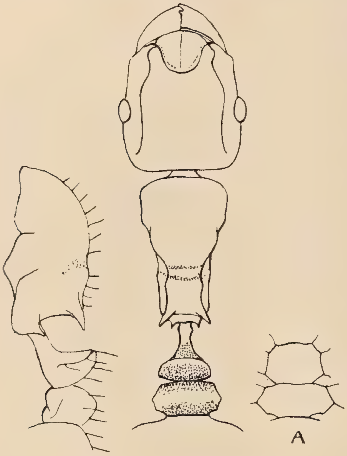

Fig. 69.—*T. umtaliensis*. A, petiole seen from behind.

☿, 3 mm. Head and thorax varying from a pale dirty ochreous to pale yellowish brown, the head usually darker than the thorax. First abdominal segment brown, the rest brownish ochreous. Legs and antennae ochreous, the club of the latter reddish ochreous. Body with an erect, pale yellowish, long and coarse pilosity, fairly abundant, longest on the thorax and nodes. Legs and antennae with a sparse and decumbent pubescence. Head and dorsum of thorax longitudinally reticulate-rugose, the rugae widely spaced, thin, prominent and of a darker colour than the rest of the integument, the spaces between the rugae smooth and shining. A distinct demiscrobe present, closely and superficially reticulate and fairly dull. Mandibles dull, closely and finely striate. The clypeus has 4 or 5 longitudinal rugae, the median one strongest. Sides of thorax shallowly reticulate-punctate, with an irregular rugose reticulum superimposed; declivity of epinotum transversely striate. Nodes of petiole shining, sparsely and feebly rugose. Abdomen smooth and shining, the basal fourth of the 1st segment strongly striate fanwise. The rugae of the head and thorax are finer than in the race *do* of *squaminode*, and much more anastomosed. Head slightly narrowed anteriorly, about one-sixth longer than wide behind, the posterior angles rounded, the posterior margin straight. Eyes convex and prominent, placed at the middle of the sides. Frontal carinae widely divergent backwards, forming the upper margins of the demiscrobes ; 2nd–7th joints of the flagellum twice as wide as long. Pronotum in front transversely convex ; the promesonotum is a little longer than wide in front, evenly convex from front to back in profile, much less constricted between the pronotum and mesonotum, and between the latter and the epinotum, than in *squaminode,* race *do,* and longer than in that species. Dorsum of epinotum quadrate, moderately oblique, as long as wide, and as long as vertical declivity ; epinotal teeth a little longer than their basal width, as long as the space between their bases, and three times longer than the episternal teeth. First node of petiole squamiform, as long as its peduncle, one and a half times higher than long below, the anterior face vertical, convex transversely, the posterior face convex from side to side and from above to below, the dorsal edge rounded. Seen from behind, the node is wider below than above, irregularly hexagonal, each of the angles ending in a long hair. The 2nd node, seen from above, is also angulated in outline, and is two and one-third times wider than long, and about one-third wider than the 1st. Legs shining, the femora moderately swollen.

Umtali, S.R. The nests, of which several were examined, were situated in a hard sandy path. The entrances are about 2 mm. wide, surrounded by a low wall about 1 to 2 mm. high, composed of woven grass roots and fibre.

This species belongs to the *squaminode* group, in which it is distinguished by the finer sculpture, the narrower thorax, the strong pilosity and the angulated outline of the nodes.

Type in my collection. (S.A.M., R.M., G.A. colls.)

Tetramorium repentinum, n. sp.

☿, 2·7–2·9 mm. Head and thorax dark castaneous brown, petiole and abdomen piceous or sometimes entirely piceous, legs dark ochreous, mandibles and antennae reddish ochreous. Abdomen, petiole and epinotum, except its base, smooth and shining. The rest of the body dull. Head longitudinally and very regularly striate from the anterior margin of the clypeus to the occipital margin, somewhat as in *T. grandinode,* Santschi ; the striae also extend over the floor of the distinct demiscrobes. Thorax longitudinally rugose as far as the base of the epinotal spines, also transversely rugoso-reticulate in front, at the base of the mesonotum and of the epinotum.

Pilosity sparse, composed of suberect and fairly short golden yellow hairs, longest on the petiole, and more scanty on the thorax than elsewhere. Antennae and legs sparsely pubescent. Head as wide as long, narrowed in front, the sides convex, the posterior margin shallowly concave. The posterior margin of the median area of the clypeus indistinct, barely defined by a slight thickening of the striae, and the posterior margins of the lateral pieces not raised to form a trenchant ridge. Anterior margin of the clypeus straight. Mandibles smooth, shining, sparsely punctured, armed with two strong apical teeth, indistinctly dentate behind them. Antennae 12-jointed, the scapes as long as the demiscrobes, the 2nd joint of the flagellum a little wider than long, the 3rd–8th joints much wider than long. Eyes large, placed behind the middle of the sides. Promesonotum a little wider than long, widest at the shoulders, which are rounded. Mesoepinotal suture broad and fairly deep, bounded by a raised line at the base of the epinotum. Dorsum of epinotum slightly narrowed towards the spines, a trifle wider at the base than long. Epinotal spines acute, divergent, directed obliquely upwards and backwards, a little longer than their basal width. Declivity vertical, a little shorter than the dorsum. Episternal teeth very small and obtuse. The petiole intermediate in structure between that of *T. grandinode*, Santschi, and *T. squaminode*, Santschi. The 1st node cuneiform, the dorsal edge fairly acute; seen from above, the sides and dorsal edge meet almost rectangularly, the posterior face moderately convex and a little wider than long, the anterior face vertical and convex transversely. The 2nd node is transversely oval, only a little wider behind than in front, convex above from back to front, nearly half as wide again as the 1st node, and three-fourths wider than long, produced on each side anteriorly and below into a rounded, slightly flattened (from above to below) and prominent tubercle, pointing forwards. Abdomen one-fifth longer than wide. Femora moderately swollen.

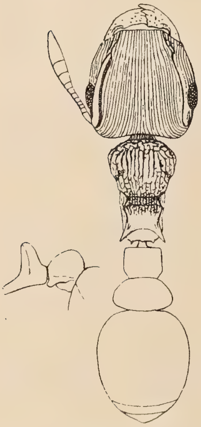

Fig. 70.
T. repentinum, n. sp.

Sawmills, Umgusa River, S.R.; Umtali, S.R., in sandy soil.

A peculiar species characterised by its unusual habits and by the very regular sculpture of the head, by the absence of a trenchant ridge behind the lateral pieces of the clypeus, and by the shape of the petiole.

It is a highly myrmecophagous species, preying chiefly on the ☿☿ of small Pheidoles, (*punctulata*, *Arnoldi*, etc.), but also occasionally on Monomorium and other Tetramorium. At Umtali several nests were examined. All round the entrances to the nests the ground was strewn with the carcases of other ants, and workers were seen coming in from all sides, each one carrying in its jaws some unfortunate ant victim, usually gripped behind the head or between the epinotum and petiole. Type in my collection.

T. GUINEENSE Fab., race STRIATUM, Stitz.

Page 308. "Race *striatum*," this should read "Race *cristatum*."

TETRAMORIUM SOLIDUM, Emery, var. TUCKERI, n. v.

☿, 4·8–5·1 mm. This differs from the type of the species as follows:—The colour is black; base and apices of the femora, tibiae, tarsi, mandibles and antennae more or less ferruginous. The sculpture is much stronger, especially on the head, which is very evenly and longitudinally striate, the spaces between being about 2 to 2½ times wider than the striae. The mesoepinotal suture is distinct and the sides of the epinotum are vertical, the dorsum thereby sharply marginate at the sides, parallel-sided and concave transversely. The spines are less divergent. The 1st node of the petiole is reticulate-punctate, and has also some strong rugae superimposed concentrically; the 2nd node transversely rugose, its ventral surface produced on each side into a strong triangular tooth as long as its basal width (much longer than in the type of the species). The basal third of the abdomen is longitudinally rugulose.

♀, 7 mm. Mesonotum longitudinally striate, with finer striae in the spaces between the large striae. The suture between the scutellum and the paraptera deeply clathrate. Epinotal teeth shorter than in the ☿, shorter than their basal width, horizontal and not divergent. Dorsal face of the 1st node flat and almost quadrangular, the sides feebly convex, the anterior and posterior margins straight, one and three-quarter times wider than long. Second node like that of the ☿, less convex transversely, half as wide again as the 1st, and at least twice as wide as long. Wings brownish yellow, nervures and stigma ochreous.

S. W. Africa (R. W. E. Tucker).

In one specimen, ☿, taken on the same occasion as the others, the epinotum has the sides oblique and convex like the type of the species, and the dorsum is neither marginate laterally nor excavated. The colour of the type of the species is described by Emery as piceous, but in the paratypes in the S. A. Museum, the colour is not darker than chestnut brown.

(S.A.M., G.A. colls. Types in S.A.M. coll.)

TETRAMORIUM PERINGUEYI, n. sp.

☿, 4·4–4·6 mm. Dark brick-red, the anterior two-thirds of the head, the apical half or two-thirds of the abdomen, the middle and hind femora (except at the base and apex) darker or reddish brown. In some specimens the apex of the abdomen is almost piceous. Head, thorax and petiole moderately shining, the spaces between the rugae quite shining. Legs and abdomen shining, the basal fourth of the latter somewhat dull, longitudinally and closely striate and shallowly punctured. Pilosity long, erect and abundant all over, including the legs and antennae, the hairs truncate or very blunt at their tips and yellowish white. The hairs on the anterior margin of the clypeus and on the apex of the abdomen longer and pointed. A scanty pubescence present only on the flagellum. The sculpture of the head and thorax like that of *Emeryi*, race *cristulatum*, but the mesonotum and epinotum are just as coarsely rugoso-reticulate as the pronotum, and the longitidinal striae on the middle (transverse) third of the head are divergent behind. Sides of the thorax longitudinally rugoso-striate. Nodes of petiole coarsely and irregularly rugose. Tibiae and scapes finely and longitudinally striolate and fairly dull. Head quadrate, as wide as long, as wide in front as behind, the sides parallel, the posterior margin almost straight or only very shallowly concave in the middle, the posterior angles widely rounded. Clypeus twice as wide as long, the anterior margin widely and deeply emarginate, with about 5 or 6 longitudinal striae, the median one not stronger than the others. Mandibles strongly and longitudinally striate, subopaque, with about 6 teeth. Frontal carinae divergent, ending at about the level of the eyes and continued behind them as a stria, not forming the least trace of a scrobe. Eyes not large, feebly convex, placed slightly behind the middle. The scapes reach the posterior fifth of the head; 3rd joint of flagellum a little wider than long, all the other joints longer than wide. Head two-thirds wider than the thorax. Thoracic sutures obsolete. Seen in profile, the dorsum of the thorax forms a continuous and fairly low convexity from the anterior margin to the base of the spines. Thorax slightly constricted between the meso- and epinotum; the promesonotum submarginate in front, the shoulders depressed and subangular, as long as wide between the shoulders. Dorsum of epinotum as long as the vertical declivity. Spines thin, acute, moderately divergent, directed obliquely backwards, as long as the interval between their bases. The shape of the nodes is intermediate between that of *Emeryi-cristulatum* and *T. guineense*. The peduncle of the 1st joint is as long as the node; the latter has the anterior and posterior faces vertical, the dorsal face trapezoidal and nearly flat, three-fifths wider behind than in front. The 2nd node is almost twice as wide as long in the middle, the anterior margin convex, the posterior margin straight, the sides straight and slightly convergent posteriorly, the dorsal face convex. The 2nd node is also hardly shorter than, and nearly one-third wider than the 1st. Abdomen truncate at the base. Femora only moderately swollen.

Kimberley, (Power).

Allied to *Emeryi* but differing markedly in the shape of the head, the abundant, erect and coarse pilosity, the deeply emarginate clypeus and the absence of the raised line between the pronotum and mesonotum.

(S.A.M., R.M., G.A. colls. Type in S.A.M. coll.)

TETRAMORIUM ARGENTEOPILOSUM, n. sp.

☿, 3·3 mm. Black; the anterior margin of the head narrowly, the mandibles, flagellum, antennal sockets, basal third of the scapes, the apex of the epinotal declivity, the coxae and tarsi, ferruginous; femora and tibiae dark reddish brown, paler at their bases and apices. Head and thorax with a few whitish and thick erect hairs; petiole and abdomen with a moderate pilosity composed of long, obliquely exserted, thick, pointed white hairs, somewhat glistening; legs and antennae sparsely pubescent.

The fundamental sculpture of the head, thorax, nodes of petiole and basal fourth of the 1st abdominal segment is a close reticulate puncturation, very distinct on the meso- and epinotum, very superficial on and just behind the clypeus. Clypeus carinate in the middle, its anterior margin convex. The clypeus and vertex between the frontal carinae longitudinally and fairly evenly striate, the striae hardly half as wide as the spaces between them. Sides of the head reticulate-rugose, the rugae not extending over the space adjacent to and below the frontal carinae, thereby forming an indistinct demiscrobe. Mandibles shining, feebly striate and sparsely and finely punctured. The pronotum has a few fine longitudinal striae, which do not reach as far as the mesonotum. The legs and

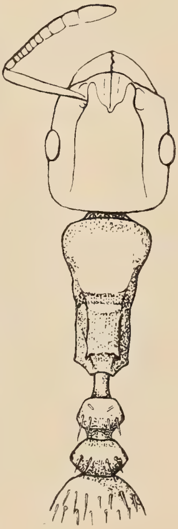

FIG. 71.
T. argenteopilosum.

abdomen, excepting the base of the latter, are shining, the rest of the body is dull.

Head slightly longer than wide, the sides feebly convex, barely narrower in front than behind, the posterior margin straight, the posterior angles rounded. The scapes extend back to the posterior fifth of the head ; 1st joint of the flagellum nearly twice as long as wide, 2nd–7th joints twice as wide as long, the 8th one and a half times wider than long. Eyes not very prominent, placed at about the middle of the sides. Promesonotal suture obsolete, the promesonotum fairly convex in front, the shoulders rounded, slightly longer than wide in front. Mesoepinotal suture fairly deep and wide, the thorax moderately constricted at that point. Dorsum of epinotum submarginate at the sides, sloping gradually downwards from the base, its junction with the declivity rounded, about one-third longer than wide, nearly parallel-sided, as long as the vertical declivity. Epinotal teeth small, triangular, a little wider at the base than long, less than half as long as the space between their bases. Episternal teeth reduced to small rounded lamellae, much shorter than the epinotal teeth. First node subcuboid, higher than long, as long as its peduncle, the anterior and posterior faces subvertical, the dorsal face slanting posteriorly, subtrapezoidal and nearly half as wide again as long. Second node transversely lozenge-shaped, convex from front to back above, one-fourth wider than the 1st, and half as wide again as long.

♀, 4·2 mm. Sides of pronotum and upper half of mesopleurae finely and longitudinally striate. Pronotum narrowly exposed above, the shoulders subangular, coarsely rugose. Mesonotum and scutellum longitudinally striate. Nodes of petiole with a few rugae above. Basal half of abdomen reticulate-punctate. Epinotal teeth shorter than in the ☿, the dorsal face of the 1st node shorter, nearly twice as wide as long. Otherwise like the ☿.

Sawmills, Umgusa River, S.R., nesting in sandy soil.

Type in my collection.

(S.A.M., R.M., G.A. colls.)

TETRAMORIUM SOMNICULOSUM, n. sp.

☿, 2·8–3·2 mm. Burnt-sienna or pale mahogany brown, the legs and antennae paler than the body. Legs and abdomen shining, the rest almost dull to the naked eye, but under a low magnification the spaces between the rugae appear quite shining. Mandibles, legs and antennae with a yellowish, decumbent and moderately abundant pubescence.

The pubescence on the abdomen is nearly decumbent, yellowish golden and short, composed of thin pointed hairs intermixed with somewhat flattened or clavate and obtuse hairs, very evenly distributed; also a few hairs on the clypeus, otherwise glabrous. Head and thorax very coarsely rugose, the rugae emphasised longitudinally, raised and trenchant; here and there, especially on the cheeks, back of the head and the mesoepinotum more or less reticulate-rugose. Sides of the thorax longitudinally rugose or almost sulcate. Nodes of petiole reticulate-rugose above, the sides and the anterior peduncle finely reticulate-punctate. Abdomen sparsely and finely punctured.

Head subquadrate, barely longer than wide (excluding the mandibles), almost as wide in front as behind, the sides moderately convex, the posterior margin shallowly concave in the middle. Mandibles finely striate and punctate, moderately shining. Clypeus with a strong median carina, distinctly impressed in the middle behind the feebly emarginate anterior margin. The frontal carinae are sharply defined and form the upper margin of a demiscrobe, which extends back as far as the posterior sixth of the head. The scapes are as long as the demiscrobes; 2nd-8th joints of the flagellum wider than long. Eyes small, composed of about 15 facets, placed at the middle of the sides of the head.

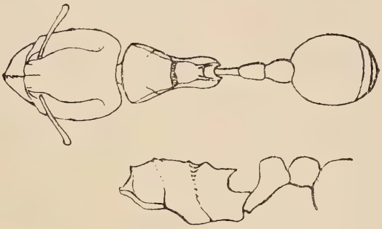

Fig. 72.
T. somniculosum. ☿

Pronotum sharply marginate in front, the margin trenchant and high. Sides of the thorax vertical. The position of the obsolete promesonotal suture is indicated by a sharp transverse ridge. Mesoepinotal suture wide and shallow, bounded on the dorsum in front and behind by a strong transverse ridge. Dorsum of epinotum narrow, marginate laterally, the epinotal teeth acute, horizontal, hardly as long as the interval between their bases and very little longer than the episternal teeth; their lower margins are continued down the declivity and join the episternal teeth. Petiole long; the 1st joint distinctly compressed laterally, the peduncle about as long as the node, which, seen from above, is one and three-quarter times longer than wide behind. The 2nd node is a little longer than wide, also a little wider and longer than the 1st. Abdomen globose.

The sculpture in this insect is exceedingly coarse, or almost sulcate, the rugae standing out very prominently. The long petiole and the sharp anterior margin of the pronotum are also very distinctive.

♀, 3·7 mm. Colour of the body darker than in the ☿, more vandyke-brown. Sculpture and pubescence as in the ☿; mesonotum longitudinally sulcate, without transverse rugae, scutellum very widely reticulate-rugose. Dorsum of epinotum transversely striate between the epinotal teeth, which are wider apart and shorter than in the ☿. Pronotum sharply marginate in front as in the ☿. Petiole similar to that of the ☿, but the anterior margin of the dorsal face of the 1st node is straight, not convex. Wings slightly brownish, nervures and stigma pale yellow. Otherwise like the ☿.

♂, 3 mm. Head piceous, thorax and abdomen dark brown, legs and antennae pale straw-yellow, mandibles ochreous. Pubescence as in the ♀. Head moderately shining, longitudinally striolate, transversely so behind the ocelli, the cheeks in front also very finely recticulate-punctate. Mandibles fairly large, 6-dentate, smooth and shining. Median area of the clypeus with 4 longitudinal raised lines, fairly convex behind. Eyes not very convex, occupying less than the anterior half of the sides. Ocelli small. The scapes do not extend back as far as the posterior ocelli. Head as long as wide, the sides and posterior margin feebly convex. The 2nd joint of the 9-jointed flagellum is as long as the scape, the 1st and 3rd joints subequal and barely longer than wide.

Mesonotum smooth and shining, with only a few striae near the parapsidal sutures, the Mayrian furrows well defined and clathrate. Scutellum reticulate-rugose. Epinotum finely reticulate-punctate and dull at the sides, slightly shining above and over the declivity; the latter is subvertical, marginate at the sides and longer than the dorsum. Petiole shorter than in the ♀ or ☿, the 1st node less compressed. Wings as in the ♀.

Amatongas Forest, Portuguese E.A. A very sluggish species; the nest was formed in the débris between the exposed roots of a tree.

(S.A.M., R.M., G.A. colls. Types in my collection.)

TETRAMORIUM SETIGERUM, Mayr, race QUAERENS, Forel,
var. AMATONGAE, n. v.

☿, 4 mm. Head and thorax more shining than in the type of the race, owing to the total absence of the fundamental reticulate-punctate sculpture between the rugae. The 2nd–4th joints of the flagellum are distinctly wider than long (as long as wide in the race), the 5th and 6th as long as wide. Otherwise like the type of the race.

Amatongas Forest, Portuguese E.A. Nesting under the bark of a decayed tree.

(S.A.M., R.M., G.A. colls. Type in my collection.)

Tetramorium semireticulatum, Arnold.

♀, (hitherto undescribed), 3·2 mm. Piceous; legs, antennae and mandibles pale brown. Sculpture similar to that of the ☿, but stronger, the mesonotum and scutellum irregularly reticulate-rugulose and with a few longitudinal rugae superimposed, basal fourth of abdomen reticulate-punctate and dull, the rest smooth and shining. Epinotal teeth much larger proportionately than in the ☿, nearly as long as wide at the base. Otherwise like the ☿.

Hillside, Bulawayo. Type in my collection.

Tetramorium Akermani, n. sp.

☿, 3·5–3·7 mm. Reddish or castaneous brown, the abdomen dark brown, legs and antennae yellowish brown, mandibles reddish ochreous. Head longitudinally striate between the frontal carinae, the striae widely spaced, large, and connected by a few transverse striae. Sides of head strongly reticulate-rugose, the rugae emphasised longitudinally, the transverse rugae extending across the floor of the demiscrobes. Clypeus with about five longitudinal rugae, the middle one strongest but hardly forming a distinct median carina. Mandibles shining, finely and sparsely punctured. Thorax longitudinally and coarsely rugose, in front more reticulate-rugose, elsewhere with a few transverse anastomoses. The rugae end just before the epinotal spines, the space between the spines and the declivity is superficially reticulate and shining. Sides of thorax irregularly reticulate-rugose, the spaces between feebly reticulate-punctate. Nodes of petiole shining almost smooth, with only a few feeble striae. Abdomen smooth and shining. The pilosity on the body is composed of long, thin, yellowish white hairs, fairly scanty except on the abdomen. Legs and antennae with fairly long and oblique pubescence. Head, excluding the mandibles,

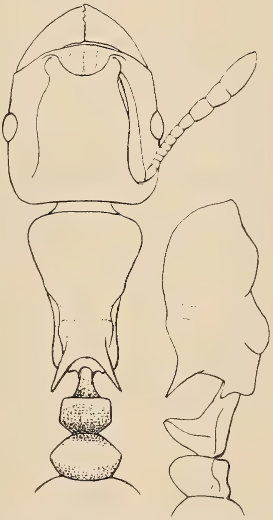

Fig. 73.—*T. Akermani.*

very little longer than wide, widest a little behind the eyes, the posterior angles rounded, the posterior margin almost straight. Eyes moderately large, placed at about the middle of the sides. Frontal carinae widely divergent, extending back to the posterior 6th of the head, forming the upper walls of well-defined demiscrobes. Scapes as long as the latter ; 1st joint of the flagellum half as long again as wide, the 2nd–5th joints about twice as wide as long, the 6th and 7th about one and a half times wider than long. Mandibles with six blackish teeth, the three anterior ones largest. Anterior margin of clypeus feebly excised in the middle.

Promesonotum fairly convex transversely in front, moderately so lengthwise, slightly wider in front than long in the middle, the promesonotal suture obsolete, the mesoepinotal indistinct above. The dorsum of the epinotum is about as wide as long ; the epinotal spines are long, acute, divergent, quite twice as long as their basal width, longer than the space between their bases, three times longer than the episternal teeth, the latter acute. First node of petiole squamiform, as long as its peduncle, the anterior face vertical and feebly convex transversely, shorter than the posterior face which is almost flat and subvertical. Seen from behind, the scale is subrectangular, about as high as wide above, narrowed towards the base. Second node transversely oval, half as wide again as long, and not quite half as wide again as the 1st. Abdomen globose. Pietermaritzburg (type) and Majuba, Natal, (*leg.* C. Akerman) ; Durban, (*leg.* C. P. v. d. Merve). The latter differ slightly in having the pilosity shorter and composed of blunt hairs, not finely pointed as in the specimens from the other localities mentioned. Apparently allied to *Titus*, Forel, from which it differs, judging by the description alone, by the larger size, the not distinctly carinate clypeus, and by having the promesonotum sculptured all over. The 2nd node is also narrower, being only half as wide again as the 1st, (nearly twice in *Titus*). Type in my collection.

Akermani, var. frigidum, n. v.

☿, 3·5 mm. Head, petiole and abdomen dark brown, legs, antennae and mandibles pale brownish yellow, the club of the antenna brown. Clypeus with a distinct median carina. The upper surface of the head between the frontal carinae is strongly and very regularly striate lengthwise, more strongly so than in the type of the species. Mesoepinotal suture wide and fairly shallow, but deeper than in the type. Epinotal spines long and thin, as long as, or a little longer than the interval between their bases. Petiole just like that of the type of the species, the scale of the 1st joint only a trifle thicker. Pilosity yellowish, erect, composed of short, thick and fairly blunt hairs. Otherwise like the type of the species.

Matroosberg, Hex River Mts., Cape Prov., 5000–7000 ft. (R. W. E. Tucker).

(S.A.M., R.M., G.A. colls. Type in my collection.)

var. DRAKENSBERGENSIS, n. v.

☿, 2·4–3·2 mm. Yellowish brown, the head sometimes darker, legs and antennae ochreous, the club brown. The sculpture resembles that of var. *frigidum*, but the longitudinal rugae on the thorax are somewhat coarser and wider apart, the sculpture of the head finer, especially on the cheeks. The promesonotal suture is feebly indicated in the largest ☿☿, and in them the mesoepinotal suture is also fairly distinct, but very shallow in the smaller ☿☿. Pilosity as in *frigidum*. The posterior face of the scale of the petiole is feebly convex (nearly flat in *frigidum*), and the 2nd node is a trifle narrower, or barely more than one-third wider than the 1st. Otherwise like *frigidum* and the type of the species.

Mountains of Natal, 5300 ft. (Haviland), *ex* Natal Mus. coll.

This form is peculiar in its wide range of variation in size, but apart from this feature and those enumerated above, I can see no other differences between it and var. *frigidum*. The shape of the scale in this variety and in var. *frigidum* is very much like that of *T.* (*Xiphomyrmex*) *Weitzeckeri*, but the dorsal edge is not broad as in that species but narrow and almost trenchant.

(G.A. coll.)

TETRAMORIUM JEJUNUM, n. sp.

☿, 2·7 mm. This species belongs to the *T. Titus* group, having the 1st node of the petiole squamiform. Very pale straw-yellow, the club of the antennae a little darker or ochreous. Shining. Head longitudinally striate above between the frontal carinae, (about 6 or 7 striae), the cheeks reticulate-rugose, the rugae far apart, the spaces in between smooth and shining. Clypeus with a strong median stria and one or two thinner striae on each side. Demiscrobe smooth and shining. Thorax reticulate-rugose, the rugae very wide apart. Declivity and apical half of the dorsum of the epinotum and all the rest of the body smooth and shining. Pilosity pale yellowish, fairly short and blunt,

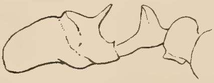

FIG. 74.—*T. jejunum.*

sparsely distributed all over. Pubescence oblique and scanty, present only on the legs and antennae.

Head quadrate, one-fifth longer than wide, nearly as wide in front as behind; the sides nearly straight, the posterior margin straight, the posterior corners narrowly rounded. Mandibles shining, feebly punctured, armed with 6 small teeth. Anterior margin of the clypeus straight. Eyes convex and fairly large, placed just behind the middle of the sides. Frontal carinae moderately sinuate, extending back nearly as far as the posterior margin and forming the upper margin of a distinct demiscrobe. The scapes are as long as the demiscrobes; 2–4th joints of the flagellum twice as wide as long, the 5th joint nearly so. Promesonotal suture obsolete, the thorax slightly constricted between the pronotum and mesonotum, and more deeply at the mesoepinotal suture, the latter fairly shallow. Seen in profile, the promesonotum forms an even convexity which rises gradually as far as the mesoepinotal suture. Dorsum of epinotum as long as wide at the base, with a raised transverse line or ruga near the base, slightly narrowed towards the apex, submarginate laterally, concave between the spines. The spines are directed obliquely backwards and outwards, acute, twice as long as their basal width and as long as the interval between their bases; declivity vertical, as long as the dorsum, episternal teeth small and acute. The peduncle of the 1st joint of the petiole is as long as the node; the latter is subsquamiform, or seen from the side cuneiform, the anterior face vertical and convex from side to side, the posterior face convex from above to below. Seen from behind, the scale is subovate, its dorsal edge trenchant and strongly convex from side to side. The 2nd node is transversely oval, convex above, one-fourth wider than the 1st, the ventral surface produced on each side into an elongate tubercle which ends in a rectangle in front. Femora feebly swollen.

Sawmills, Umgusa River, S. Rhodesia. Nesting in sandy soil, and very easily overlooked, since its colour matches that of the sand. A species distinctly defined by the transverse ridge near the base of the epinotum.

Type in my collection.

TETRAMORIUM WARRENI, n. sp.

☿, 2·1 mm. Pale ochreous, smooth and shining, the anterior half of the head and the sides of the thorax very feebly and longitudinally striate or striolate. Posterior half of the head feebly and very sparsely punctured. Pilosity thin, short, erect and scanty, oblique on the legs and antennae. Pubescence wanting. Head elongate quadrate, about one-fourth longer than wide, parallel-sided, the posterior margin feebly concave, the posterior half of the head a little thicker than the anterior, more convex above when seen from the side. Clypeus vertical in its anterior half, with 3 longitudinal raised lines, not carinate. Mandibles slightly shining, feebly striate, 6-dentate, the teeth brown. Frontal carinae exceedingly short, not extending beyond the posterior margin of the indistinct frontal area. The scapes extend only a little beyond the middle of the head ; the 2nd–7th joints of the flagellum twice as wide as long, the 8th one and a half times wider than long. Eyes very small, composed of 2 or 3 facets, placed at about the middle of the sides. Promesonotum distinctly marginate in front, feebly so at the sides, trapezoidal, a trifle longer than wide in front, the promesonotal suture entirely obsolete. The thorax is fairly strongly constricted at the mesoepinotal suture, which is very shallow or nearly obsolete. The dorsal profile of the thorax nearly flat. Dorsum of epinotum submarginate at the sides, oblique, a little longer than wide, widest just beyond its base, the teeth very small, acute and oblique, hardly as long as their basal width and not longer than the episternal teeth. Declivity vertical, marginate, shorter than the dorsum. Peduncle of the 1st joint of the petiole thick, not quite as long as the node, the latter with a short and vertical anterior face, a convex and oblique posterior face, and a dorsal face which is widest behind and twice as wide as long. Second node transversely oval, convex above transversely and lengthwise, very little wider than the 1st. Abdomen half as long again as wide.

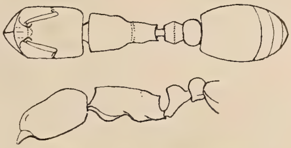

Fig. 75.—*T. Warreni.*

Natal, (Haviland). I have much pleasure in naming this species in honour of Dr. E. Warren, Director of the Natal Museum.

The nearest allies to this species in our fauna are *T. subcoecum-inscia,* Forel, and *T. Traegaordhi,* Santschi. In *Warreni* the 1st node is much flatter above than in *subcoecum,* and the head is much more elongate than in *Traegaordhi.*

Ex Natal Mus. coll. Type in my collection.

Tetramorium vexator, n. sp.

☿, 3·8 mm. Yellowish brown (dark raw umber), the sides of the thorax, the legs and mandibles a little paler or more yellow. Head fairly dull, thorax moderately shining, the declivity and petiole a little more so, the abdomen and legs smooth and very shining, the legs also very finely and sparsely punctured. Head strongly, longitudinally and regularly striate, the cheeks in front with a few transverse strands between the longitudinal ones, the spaces between the striae at least three times as wide as the striae themselves. Clypeus striated like the rest of the head, its anterior margin straight, feebly excised in the middle. Mandibles 5-dentate, smooth, shining and sparsely punctured. Thorax longitudinally rugoso-striate with a few transverse strands here and there, the striae on the dorsum quite as widely spaced as those on the head, those on the sides closer together; the striae become effaced towards the posterior margin of the thorax, and the declivity is smooth in the middle, finely rugose at the sides. Both nodes smooth and shining, the posterior face of the 1st node coriaceous at the margins. Pilosity yellowish, oblique, long and thin, fairly sparse all over, shorter and almost decumbent on the legs and antennae; flagellum and tarsi with a thin pubescence.

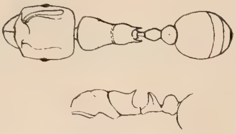

FIG. 76.
T. vexator. × *ca* 16.

Head almost square, the corners rounded, barely narrower in front than behind. The frontal carinae extend back as far as the posterior fourth of the head and form the upper boundary of a demiscrobe, which is slightly shining and almost smooth. Scapes as long as the demiscrobes; 2nd–6th joints of the flagellum wider than long. Eyes placed at the middle of the sides. Promesonotum submarginate in front, not longer than wide in front, trapezoidal. Promesonotal suture defined only at the sides. Mesoepinotal suture wide but shallow. Dorsum of epinotum submarginate, widest a little beyond its base, very little longer than wide. Epinotal spines nearly vertical, acute, barely divergent, a little longer than their basal width and as long as the interval between them. First node of petiole, seen from the side, subconical or subcuneiform, as high as the whole joint is long and longer than its peduncle, narrowed towards the summit which is transverse, the anterior face vertical and convex transversely and vertically. Second node transversely oval, nearly one-third wider than the 1st, a little wider behind the middle than in front of the same, very convex above. Abdomen subcircular, hardly longer than wide. Femora swollen.

Pietermaritzburg (Dr. C. Akerman), *ex* Natal Mus. coll. Type in my collection.

Not unlike *T. Popovici*, Forel, but with quite a differently shaped 1st joint of the petiole, stronger sculpture and smooth mandibles.

TETRAMORIUM INCRUENTATUM, Arnold.

Santschi, (as *Rhoptromyrmex Arnoldi*), Ann. Soc. Ent. France, vol. 84, p. 503, ☿, 1915.

Ann. Soc. Ent. France, vol. 85, p. 286, 1916.

☿, 2·5 mm. Pale straw-yellow, the anterior third of the head a little darker. Dull, the abdomen and legs slightly shining. The fundamental sculpture on the head, thorax and petiole consists of a fine reticulate puncturation, very superficial on the vertex and on the nodes. In addition the head and pronotum are longitudinally striate, the cheeks in front partly reticulate-rugose. Abdomen microscopically alutaceous and smooth. Pilosity erect, short and thick, present only on the anterior margin of the clypeus, the 2nd node and on the abdomen. A moderate pubescence on the legs and antennae.

Head quadrate, hardly longer than wide, the sides straight, the posterior angles rounded. Median area of clypeus feebly carinate, its anterior margin arcuate. The posterior lateral margins of the clypeus are raised to form a transverse ridge (in the manner typical of the genus). Mandibles finely striate, with a few large punctures behind the masticatory margin, which is indistinctly dentate. The frontal carinae are continued back as fine lines as far as the posterior third of the head. Antennae 12-jointed, the 2nd–8th joints of the flagellum much wider than long. Eyes large, convex, placed at the middle of the sides. Head wider than the thorax. Promesonotum trapezoidal, as wide in front as long, submarginate in front, the shoulders fairly distinct and narrowly rounded, the promesonotal suture obsolete. The thorax is fairly strongly constricted at the mesoepinotal suture, which is distinct. Dorsum of epinotum two-thirds longer than wide, widest in the middle, convex transversely, straight and oblique lengthwise, ending on each side in a blunt and low tubercle; the declivity subvertical, half as long as the dorsum. Peduncle of the 1st joint of the petiole as long as the node. The anterior face of the latter is vertical, convex transversely and longer than the posterior face, which is convex from above to below; its dorsal face, seen from above, is nearly semi-elliptical, about as long as wide behind, the posterior margin convex. Second node half as wide again as long, and half as wide again as the 1st, the lower surface furnished on each side with an elongate and rounded lobe.

Victoria Falls; nesting in sandy soil.

In the second reference cited above, Dr. Santschi, who described the species originally as a *Rhoptromyrmex*, suggests that it should perhaps be transferred to the genus *Tetramorium*. I have adopted this suggestion, since it seems to me that the presence of the lateral ridges of the clypeus and the not compressed 1st node preclude the species from being attached to *Rhoptromyrmex*.

Whether *Triglyphothrix* be regarded as a subgenus of *Tetramorium* or not, the specific name is preoccupied in *Triglyphothrix Arnoldi*, Forel, and I have therefore altered the name of this species.

Var. LUTEOLUM, n. v.

☿, 2·3–2·5 mm. Head and antennae pale reddish ochreous, the rest pale ochreous, but the abdomen somewhat darker than the thorax, brownish yellow over its middle third. The sculpture of the head is coarser than in the type of the species, the longitudinal striae on the vertex less continuous. The head is also narrower. The mesoepinotal suture deeper; the dorsum of the epinotum is distinctly marginate at the sides and is flat transversely, it ends in larger apical tubercles, these being almost blunt and triangular teeth. The dorsal face of the 1st node is wider, or half as wide again as long, its anterior margin semicircular, not semi-elliptical as in the type of the species. The 2nd node is two-thirds wider than long and more angular at the sides. Otherwise like the type of the species.

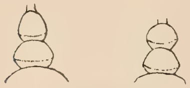

Fig. 77.

T. incruentatum type. var. *Luteolum.*

Nyamandhlovu, S. Rhodesia.

(S.A.M., R.M., G.A. colls. Type in my collection.)

T. PUSILLUM, race MOSSAMEDENSIS, Forel, var. TRISTIS, Santschi.

Ann. Soc. Ent. France, vol. 85, p. 285, ☿, 1917.

"☿, 2·3–2·5 mm. Head and thorax of a paler brownish yellow than in *mossamedensis*. Disc of promesonotum smoother and less sculptured. First node of petiole a little shorter and relatively narrower, the 2nd node, on the other hand, a little wider than in *mossamedensis*. Otherwise like the type of the race."

Bulawayo. Type in coll. Santschi (R.M., G.A. colls.)

SUB-GENUS TRIGLYPHOTHRIX, Forel.

Dr. Santschi has expressed the opinion (*in litt.*) that this should be treated as a distinct genus, to include only those species which have the hairs branched. If this view be adopted, *T. Arnoldi*, Forel, would have to be placed in the genus *Tetramorium*, and *Tetramorium Ericae*, Arnold, transferred to *Triglyphothrix*, since a re-examination of the latter species under a strong magnification reveals the presence of a few bifid hairs on the abdomen. To my mind, the branching of the pilosity is not an important character, and I prefer to retain *Triglyphothrix* as a sub-genus of *Tetramorium*.

T. (TRIGLYPHOTHRIX) PAUPER, Santschi.

Ann. Soc. Ent. France, vol. 85, p. 286, ☿, 1916.

☿, 1·2–2 mm. Yellowish brown, antennae and legs ochreous. Pilosity pale yellowish, longest on the apical half of the abdomen, not very abundant, mostly simple but here and there composed of bifid and trifid hairs. Head, thorax and petiole moderately shining, legs and abdomen distinctly shining. Head longitudinally rugoso-striate in the middle, reticulate at the sides and behind. Thorax and petiole widely reticulate-rugose. Abdomen and legs smooth. Head rectangular, nearly one-sixth longer than wide, parallel-sided, the posterior margin straight, the posterior angles narrowly rounded. Frontal carinae very divergent, reaching the posterior angles and forming the upper boundary of the demiscrobes. Eyes convex, prominent, placed a little in front of the middle of the sides. Clypeus with a strong median carina and a feebler one on each side of the same, the anterior margin straight. Mandibles smooth, shining, feebly and sparsely punctured, with 3 distinct teeth in front, feebly denticulate behind. The scape reaches the posterior fifth of the head; 2nd–7th joints of the flagellum at least two and a half times wider than long. Thoracic sutures obsolete above, the thorax feebly constricted at the position of the sutures, feebly convex lengthwise. Epinotal teeth one and a half times longer than their basal width, about as long as the interval between their bases; acute, subvertical, feebly divergent. Both nodes of the petiole transversely oval, the 1st node one-fourth wider than long, the 2nd one-third wider than long and very little wider than the first.

Cawston Farm, Umgusa River, S. Rhodesia.
(S.A.M., R.M., G.A. colls.)

TRIGLYPHOTHRIX AUROPUNCTATUS, Forel.

Amongst the material collected by Haviland, in the Natal Mus. collection, there are some specimens of this species, almost certainly paratypes. An examination of these specimens indicates certain discrepancies in Forel's description.

Except on the scape of one specimen, I have failed to see any golden reflection in the punctures, this, however, may be due to changes brought about by their lengthy immersion in the alcohol. The upper and lower grooves of the scrobe are divided by a raised line which is slightly higher in front but not forming a triangular eminence in any way. The sculpture of the 2nd node is a shallow and feeble punctuation, not coarse as stated by Forel. There is no mesoepinotal suture, its position being indicated only by a slight depression.

Auropunctatus, var. bulawayensis, Arnold.

This differs from the type of the species by its darker colour, which is yellowish brown, by the sharper sculpture of the head and thorax, and of the 2nd node which is as coarsely punctate as the 1st, and by the coarse puncturation on the base of the abdomen. The size is also somewhat greater, 3 mm.

T. muscorum, n. sp.

☿, 1·7–1·9 mm. Head, thorax, legs and antennae ochreous, the petiole brownish ochreous, the abdomen brown. Legs and abdomen smooth and shining, head and thorax reticulate-rugose, the spaces between the reticulations fairly shining. Nodes of petiole also reticulate-rugose, but with smaller meshes than on the head and thorax. Pilosity yellowish white, fairly abundant all over the body, longest on the abdomen, composed of bifid or trifid hairs. The legs have only a simple and not very dense pubescence.

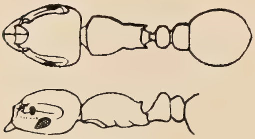

Fig. 78.
T. muscorum. ☿

Head subquadrate, a trifle longer than wide behind, a little wider behind than in front, the posterior margin straight. Mandibles with 5 or 6 teeth, finely and very sparsely punctured, shining. Anterior half of the median area of the clypeus vertical, the posterior half oblique or subhorizontal, the junction of the two planes marked by a sharp transverse ruga, also bounded on each side by a longitudinal ruga, strongly carinate in the middle. Seen from above, the carina and the lateral rugae stand out prominently, making the anterior margin of the upper portion of the clypeus appear almost tridentate. A complete scrobe present, reaching back to the end of the third quarter of the head. The scrobe is divided longitudinally by a sharp line into two halves for the reception of the folded scape and flagellum; it is shining and feebly reticulate. Scapes as long as the scrobes;

2nd–8th joints of the flagellum much wider than long. Eyes large, angulated in front, placed in the middle of the sides.

Thorax half as long again as wide across the anterior margin, moderately constricted between the meso- and epinotum, all the sutures obsolete, the dorsal profile forming a continuous and fairly high convexity. Epinotal teeth acute, divergent, a little longer than their basal width, half as long as the interval between their bases. First node of the petiole higher than the 2nd, transversely oval, slightly narrowed above or subconical, one and a half times wider than long; 2nd node very little wider than the 1st, twice as wide as long, its anterior margin feebly convex, the posterior margin straight. Abdomen globose, very sparsely and feebly punctured.

Amatongas Forest, Portuguese E.A. The nest was placed in moss, which covered the bark of a large tree growing in the depths of the forest.

(R.M., G.A. colls. Type in my collection.)

T. CONSTANCIAE, Arnold, var. TENEBROSUS, n. v.

Arnold, Ann. S.A. Museum, vol. 14, pt. 3, p. 339, 1917.

☿. Differs from the type of the species as follows:—

The sculpture of the head and thorax is much stronger, the rugae on the thorax being quite as high as wide, so that the spaces between them are much deeper or almost pit-like. The rugae on the head are wider apart, and the spaces in between (also on the thorax) are more shining. The dorsal profile of the thorax is more convex in front than in the type of the species, and the epinotal spines are less divergent and shorter, or not quite as long as the interval between their bases. The 1st node of the petiole is much narrower and less oval, barely one-third wider than long. The 2nd node is also narrower than in the type of the species, being only three-fourths wider than long (twice as wide as long in the type of the species).

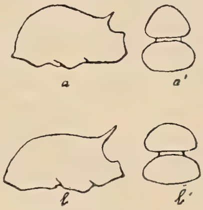

FIG. 79.
T. Constanciae. ☿
Type of species,
b, thorax; *b′* nodes.
Var. *tenebrosus.*
a, thorax; *a′*, nodes.

♀, 4·8 mm. Head, thorax, petiole, legs and antennae reddish brown, abdomen piceous. Pilosity yellowish, much longer but less abundant than in the ☿, and composed entirely of simple hairs. Thorax longitudinally rugose, the scutellum and dorsum of the epinotum also partly reticulate-rugose, the rugae wide apart, the spaces between them very smooth and shining. For the rest, sculptured like the ☿. Mesonotum wider than long, its anterior margin strongly arcuate. Epinotal teeth acute, subhorizontal, shorter than in the ☿, about one-third longer than their basal width. First node of the petiole thinner or shorter from front to back than in the ☿, more pointed above. Second node twice as wide as long and half as wide again as the 1st. Wings hyaline, nervures and stigma pale ochreous. Otherwise like the ☿.

♂, 4·5 mm. Smoky ochreous, the rugae on the thorax black, head and abdomen pale yellowish brown, tarsi, mandibles and antennae bright ochreous. Head and epinotum moderately shining, the rest of the body very shining. Head striolate-coriaceous, with a few fine rugae and reticulations superimposed on the cheeks and behind. Mesonotum smooth, sparsely punctured, the punctures large but shallow. Scutellum reticulate-rugose, epinotum longitudinally striate, somewhat reticulate at the sides. Peduncle of the 1st node longitudinally striato-rugose, both nodes reticulate, the reticulations thin and far apart.

Head trapezoidal, widest in front, and including the eyes, wider than long; clypeus convex. Eyes very convex, occupying a little more than the anterior half of the sides of the head. Ocelli large, on a raised area. The scapes reach back as far as the posterior ocelli. Scutellum transversely oval, less than half as long as the very gibbous mesonotum. The two faces of the epinotum form a single and continuous subvertical convexity. First joint of the petiole more or less clavate, the node not distinctly delimited. Second joint narrowed triangularly in front, its posterior half transversely oblong, one-third wider than long, one half as wide again as the 1st node, fairly flat above. Wings as in the ♀.

Amatongas Forest, Portuguese E.A. Very common in the shady parts of the forest; nesting in the ground.

(S.A.M., R.M., G.A. colls. Type in my collection.)

T. Marleyi, Forel, var. Akermani, n. v.

☿, 2·5–2·7 mm. This differs from the type of the species by its smaller size and by the shape of the petiole. The 1st node is more oval, the posterior margin being convex and not straight, and is twice as wide as long; the 2nd node is relatively less wide than in the type, being less than one-third wider than the 1st, and not more than two and a third times wider than long. Otherwise like the type of the species.

Pietermaritzburg, (Dr. C. Akerman), *ex* Natal Museum coll. Type in my collection.

T. Hepburni, Arnold, var. sericeus, n. v.

☿, 2·7 mm. Piceous, almost black, legs, antennae and mandible dark ochreous, the femora, except at their bases and apices, dark brown. The sculpture is similar to that of the type of the species, but less coarse, especially on the thorax and nodes, the rugosities being closer together and less prominent. The chief differences, however, between this form and the type lie in the pilosity and shape of the thorax and nodes. The pilosity is much shorter and is entirely decumbent, the shorter (trifid) hairs on the abdomen being depressed into the little punctures, (somewhat like those of *Tetramorium setuliferum*). The hairs on the legs and scapes, and sides of the 2nd node are oblique, but there are no outstanding hairs anywhere. The mesonotum is longer, being nearly half as long again as the pronotum, (only as long in the type of the species), and the thorax is more constricted at the mesoepinotal suture. The promesonotal suture is faintly indicated, (entirely obsolete in the type of the species), and the dorsum of the epinotum is steeper. The 1st node of the petiole, seen from above, is semicircular, flatter transversely above, and barely one-third wider than long, and with a straight posterior margin. The 2nd node transversely oval, twice as wide as long, one-fourth wider than the 1st.

Redbank, S.R. The nest in loose sand.

This form presents a very different appearance from that of the type of the species, but the presence of a few individuals in the same nest, which were somewhat intermediate in sculpture and pilosity, precludes its separation as a distinct species.

(S.A.M., R.M., G.A. colls. Type in my collection.)

TETRAMORIUM, sub-genus XIPHOMYRMEX.

T. (xiphomyrmex) ebeninum, n. sp.

☿, 3·75 mm. Jet-black; legs, antennae and mandibles dark piceous brown, the apical half of the last antennal joint and the last four joints of the tarsi, testaceous. Head and thorax moderately shining, the former longitudinally and coarsely striato-rugose, the striae few and far apart, the thorax widely reticulate-rugose, the sides of the head and thorax more closely sculptured and with transverse striae in addition, the demiscrobe almost smooth over its posterior two-thirds. Petiole, legs and abdomen smooth and very shining. Mandibles closely striate, with a row of large punctures behind the masticatory margin. Clypeus with a strong median carina. Legs and antennae with a sparse, long and yellowish pubescence ; head and thorax with a scanty, outstanding and pale pilosity.

Head subrectangular, about one-fifth longer than wide, (excluding the mandibles), the sides in front of the eyes parallel, behind them somewhat convex, the posterior angles rounded, the posterior margin moderately concave. The eyes are very prominent and convex, placed in the middle of the sides. Second and 3rd joints of the flagellum a little wider than long, the 4th and 5th as wide as long, the rest longer than wide. The frontal carinae, which extend back to the posterior margin of the head, are moderately divergent backwards, and form the upper boundary of the distinct demiscrobes ; the scapes do not quite reach the posterior margin. Anterior margin of clypeus feebly impressed in the middle. Anterior margin of the pronotum arcuate, the shoulders subangular. Thoracic sutures obsolete above, the dorsum of the epinotum separated from the mesonotum by a raised and sharp line. The dorsum of the epinotum is about as long as wide, slightly hollowed out ; the epinotal spines long and acute, strongly divergent, almost twice as long as they are wide at the base, quite twice as long as the space between their bases ; episternal teeth triangular, acute, one-third as long as the epinotal ; the declivity smooth and shining. Node of the 1st joint of the petiole squamiform, higher than its peduncle is long, and higher than the 2nd node. Its anterior face is convex from side to side, the posterior face flat, its dorsal edge convex transversely and moderately rounded from front to back. The 2nd node two and a third times wider than long, one-third wider than the 1st, its upper half compressed from front to back, (more so at the sides than in the middle), the anterior face vertical, a little wider in front than behind. Abdomen oval.

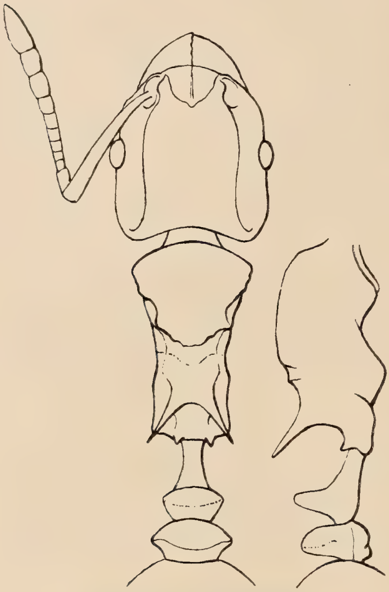

Fig. 80.—*T. ebeninum.*

Allied to *X. occidentalis*, Santschi, but differing by the length of the antennal joints, by the sculptured head and thorax and mandibles. The nodes of the petiole are thinner, *i.e.* much more compressed from front to back than in *X. Humbloti* Forel.

Durban. A small nest under a stone, Type in my collection. (R.M., G.A. colls.)

T. (XIPHOMYRMEX) ANGULINODE, Santschi, var. DAPHNIS, Santschi.

Ann. Soc. Ent. France, vol. 78, p. 385, ☿, ♀, ♂, 1909.

(var.) Ann. Soc. Ent. Belg., vol. 60, p. 16, ☿, ♀, 1920.

☿, 2·7 mm. Black; mandibles, antennae and femora brown; the tibiae, tarsi and 1st joint of the flagellum brownish ochreous. The whole body with a fine, long and whitish pilosity, fairly sparse and outstanding, but on the abdomen a little more abundant and oblique. Head longitudinally striate, with transverse anastomoses at the sides and behind, forming a wide-meshed reticulum. A complete scrobe present: it is shining and almost smooth except the anterior portion of the lower groove, which is reticulate. Promesonotum rugose, longitudinally so except at the sides, in front, and behind, where it is somewhat reticulate, the spaces between the rugae being quite three times wider than the rugae themselves. The mesoepinotal suture is bounded by a strong transverse raised line in front and behind. Epinotum irregularly rugose; sides of thorax finely reticulate, with a few rugae superimposed. The spaces between the rugae on the thorax are fairly shining. Nodes of petiole smooth and shining below, coarsely reticulate-rugose above, the 1st node with an oval and smooth median area on its dorsal face. Abdomen smooth and shining, the basal third with sparse, large and shallow punctures.

Mandibles shining, with a few very large punctures. Anterior margin of clypeus narrowly excised in the middle, the median area strongly carinate. The scapes extend back to the posterior fifth of the head, as far back as the scrobe in which it lies when folded. Frontal carinae widely divergent posteriorly, as long as the scrobes, of which they form the upper margin.

First joint of the flagellum a trifle longer than wide, the 2nd–5th joints two and a half times wider than long, the 3-jointed club longer than the rest of the flagellum. Head rectangular, slightly narrowed in front, the posterior angles rounded, the posterior margin nearly straight. Eyes moderately large and convex, placed at the middle of the sides. Shoulders of pronotum subrectangular. Promesonotum submarginate in front and behind, convex transversely and longitudinally. The mesoepinotal suture large and shallow. The dorsum of the epinotum oblique, a little wider than long, the epinotal spines acute, one and a half times longer than their basal width, not quite as long as the space between their bases. Episternal teeth small. First node of the petiole cuboid, higher than wide or long, a little longer than the peduncle, the anterior, lateral and posterior faces subvertical, the dorsal face about one-third wider than long, and quadrangular. The 2nd node transversely oval, about two-thirds wider than the 1st, twice as wide as long, rounded above from side to side and from front to back. Abdomen oval, the 1st segment as long as wide. Femora distinctly swollen in the middle.

♀, 3·3 mm. Flagellum paler than in the ☿. Promesonotum longitudinally striate, the striae closer together than in the ☿. Pronotum narrowly exposed in the middle above, more exposed at the sides, the shoulders rectangular. Scutellum wider than long. First node slightly wider than in the ☿. Wings faintly tinged with ochreous. Otherwise like the ☿.

Hillside, Bulawayo. Nesting in bare soil.

Type in coll. Santschi. (S.A.M., R.M., G.A. colls.)

T. ANGULINODE, var. CHLOE, Santschi.

Loc. cit., p. 17, ☿.

☿, 2·3 mm. This differs from the var. *daphnis* as follows :—

Antennae darker and shorter ; the 6th joint two and a half times wider than long, the 7th twice as wide as long. Sculpture of the head and thorax stronger, the vertex of the head reticulate, owing to the presence of well-defined transverse anastomoses. Thorax a little more narrowed posteriorly. Epinotal spines longer, fully as long as the space between their bases. The dorsal face of the 1st node is reticulate-rugose all over and narrower in front than behind ; it is also distinctly arched transversely. The 2nd node is rugose only on its posterior half, the anterior half, which merges obliquely into the anterior face, being smooth and shining ; the sides of the node are straight, not convex as in *daphnis*, so that the anterior corners are subrectangular.

Sawmills, Umgusa River, S.R. Type in coll. Santschi.
(S.A.M., R.M., and G.A. colls.)

T. (XIPHOMYRMEX) FOSSULATUM, Forel.

Pages 345 and 348. This species should be transferred to the genus *Pristomyrmex*, Mayr. This genus is characterised by the structure of the clypeus, in which the lateral pieces of the clypeus are reduced so much as to form a very narrow or almost linear strip on each side. The antennae are 11-jointed; mandibles usually tridentate.

PRISTOMYRMEX CRIBRARIUS, n. sp.

♀, 3·8 mm. Head and petiole dark reddish brown, thorax dark yellowish brown, abdomen black, legs and antennae dark brownish ochreous. Shining, the abdomen very smooth and glabrous. A short, thin, sparse and yellowish pilosity on the head, thorax, petiole, antennae and legs, oblique on the legs, erect elsewhere. Pubescence wanting except on the flagellum. Cheeks, upper surface of the head, promesonotum and scutellum covered all over with wide, round and moderately deep pit-like punctures, which are much wider than the spaces between them. On the thorax some of the pits coalesce, forming longitudinal grooves. Both nodes of the petiole with wide and deep longitudinal sulci at the sides; the dorsum of the 1st node has 3 wide and longitudinal grooves, and the dorsum of the 2nd node has a wide shield-shaped and smooth area in the middle. Head, excluding the mandibles, a little wider than long, barely narrower behind than in front, the sides fairly convex, the posterior margin straight. The clypeus has a median carina somewhat widened and flattened in front, and the anterior margin bears on each side three small teeth. Mandibles smooth, with 3 blunt teeth, the basal tooth largest, and separated by a wide space from the other two. Frontal carinae widely divergent, continued backwards as the upper margin of the scrobe. The latter ends at about the level of the posterior margin of the eye and is distinctly defined only in its upper half; its surface is fairly smooth except in front, where it is vertically striate. The scapes are a little longer than the scrobes; 2nd–6th joints of the flagellum wider than long, the 7th as long as wide. Eyes large and convex, placed at about the middle of the sides. Ocelli small and wide apart, smaller than most of the punctures on the head. Mesonotum nearly twice as wide as long, its anterior margin very convex; scutellum transversely oval, vertically truncate posteriorly. Epinotal spines horizontal, feebly divergent, acute and long, quite as long as the interval between them.

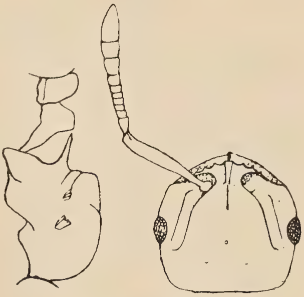

FIG. 81.
P. cribrarius. ♀

First node of petiole about as long as wide above, vertically truncate, in front and at the sides, subquadrate or only a little narrower in front than behind. Second node one-third wider than the 1st, one-third wider than long, the shield-shaped area convex from front to back and merging gradually into the smooth anterior face. Abdomen globose, barely longer than wide. All the femora strongly swollen. Deälated.

One specimen, on a tree trunk, Amatongas Forest, P.E.A.; in my collection.

This species resembles *P. orbiceps*, Santschi, ☿ in the shape of the clypeus, but otherwise has no relationship to it; quite different from *P.* (*olim Xiphomyrmex*) *fossulatum*, Forel.

RHOPTROMYRMEX TRANSVERSINODIS, Mayr.

The specimens on which the descriptions (pp. 355–357) were based were collected at Pretoria (C. K. Brain), and had been compared by me with a specimen from Port Elizabeth (Dr. H. Brauns), and found to agree with the same fairly closely. Dr. Santschi, however, has drawn my attention to the fact that the Pretoria examples differ from the cotypes of Mayr which are in his possession, and I therefore propose to separate the former under the name—

Var. PRETORIAE, n. v.

The variety differs from the type of the species as follows:—

☿, 2·8 mm. (incorrectly given as 3 mm. on p. 355), and therefore somewhat smaller than the type of the species, which attains to 3 mm. The 1st node of the petiole has a narrower dorsal surface, and is a little longer than wide, whereas in the type it is as long as wide. The 2nd node is two and three-quarter times wider than the 1st, (only twice as wide in the type of the species).

These are only slight differences, but as an equal degree of difference occurs in the ♀, recently received from Zululand, the separation of the Pretoria examples is justified.

The ♀ of the type of the species differs from that of the variety (described on p. 356), as follows:—

♀, (hitherto undescribed), 3·4 mm. The whole body, including the legs and antennae, clothed with a sparing and fairly long, greyish pubescence, oblique on the legs and antennae, decumbent elsewhere. The vertex is exceedingly finely and sparsely punctured, the rest of the body impunctate, and the shallow elliptical punctures which are present in the variety are entirely absent. The posterior angles of the head do not project so far back as in the variety, and the sides above them are barely concave. Parapsidal sutures obsolete (very distinct in the variety). The dorsum of the epinotum is more deeply excavated. The 2nd node of the petiole is relatively narrower, with more angular sides and a less concave anterior margin. Otherwise just like the ♀ of the variety.

♂, (hitherto undescribed), 3·4 mm. Black; legs pale brown, tarsi, antennae and mandibles dirty ochreous. Smooth, shining and impunctate; mandibles finely aciculate and dull. Pubescence as in the ♀. Head as long as wide across the eyes, trapezoidal, (excluding the projecting portion of the clypeus), highest behind, the posterior margin feebly convex, without projecting lateral angles. Anterior margin of clypeus convex. Eyes convex, occupying a little less than one-third of the sides, placed in front of the middle of the latter. The scapes extend back as far as the anterior ocellus, 1st joint of flagellum a little longer than wide, the 2nd joint as long as the scape, and composed of 5 coalesced joints, since the whole antenna is 9-jointed; in some specimens the true 6th joint of the flagellum is faintly delimited from the rest of the composite 2nd joint. Mesonotum convex transversely in front, also above, shallowly impressed longitudinally in the middle, a little wider than long. Scutellum fairly convex, wider at the base than long. Dorsum of epinotum one-third wider at the base than at the apex, a little longer than wide at the base, marginate, the margins ending above the declivity in obtuse angles. Declivity vertical, hardly more than half as long as the dorsum. The 1st node of the petiole similar to that of the ♀, seen from above, but less narrowed in front, the dorsal surface more flattened and wider, not produced below, a little longer than deep. Second node transversely elliptical, not quite twice as wide as long, the anterior margin convex, the dorsal surface flat or slightly concave, not convex as in the ♀. Abdomen of the usual form, without prominent lateral angles at the base. Legs long and slender. Wings as in the ♀.

M'fongosi, Zululand (W. E. Jones), ☿☿, ♀♀, and ♂♂, *ex* Natal Mus. coll.; Matroosberg, Hex River Mts., (R. W. E. Tucker).

(S.A.M., R.M., G.A. colls. Types of ♀ and ♂ in my collection.)

TRIBE MERANOPLINI.

CALYPTOMYRMEX CATARACTAE, n. sp.

☿, 3 mm. Dark reddish brown, mandibles, antennae and legs paler or yellowish red-brown. The scapes, whole upper surface of the body excepting the epinotum, the femora, tibiae and 1st joint of the tarsi are clothed with large spatulate hairs, those on the head somewhat smaller than elsewhere, the promesonotum with six longitudinal rows of such hairs. The enlarged ends of these hairs are subcircular, and fully three times as large as those of *C. Arnoldi*, Forel. Closely and very finely reticulate-punctate; the abdomen, which is slightly shining, very superficially sculptured, the head and thorax above with a fine longitudinal striation superimposed. Scrobes dull and reticulate-punctate only. Head as wide as long, widest at the posterior fourth, gradually narrowed anteriorly, half as wide again as the prothorax. Mandibles aciculate, the masticatory margin finely denticulate. Head shaped as in *C. Arnoldi*, but the posterior margin is distinctly more convex, and the teeth on the upper edge of the clypeus are blunter and shorter. The posterior part of the mesonotum is flat from side to side, not convex as in *Arnoldi*, the posterior lateral angles ending in small, rounded teeth, larger than those of *Arnoldi*, and hidden by one of the spatulate hairs. The declivity and dorsum of the epinotum lie almost in the same plane, whereas in *Arnoldi* the declivity is steep. The dorsum is a little longer than wide, with a very minute prominence behind on each side, (hardly a tooth, and much smaller than in *Arnoldi*). The declivity is strongly marginate on each side. Nodes as in *Arnoldi*.

Rain Forest, Victoria Falls, 1 ☿. Type in my collection.

Larger and darker than *Arnoldi*, and quite distinct from that species by the form of the hairs, which are all strongly spatulate, the widened terminal portion being round, not oblong as in *Arnoldi*. Moreover, in the latter species the hairs are chiefly confined to the abdomen. It differs from *C. nummulitica*, Santschi, by the sculpture, especially of the epinotum, by the colour, and by the shorter peduncle of the 1st node.

MERANOPLUS SPININODIS, Arnold.

♀, (hitherto undescribed), 3·7 mm. Colour, sculpture and pilosity as in the ☿. Ocelli small and wide apart. The anterior angles of the pronotum, which is widely exposed above, end in short, acute and triangular teeth, (the diagnosis of the ♀ generic characters, p. 364, should be accordingly emended). Mesonotum unarmed, scutellum with the anterior and posterior margins arcuate, its sides vertical. Epinotal spines like those of the ☿ but stouter. Petiole similar to that of the ☿, but the teeth on the dorsal edge of the 1st node are much shorter. Abdomen oblong. Deälated. Otherwise like the ☿.

♂, (hitherto undescribed), 3·1 mm. Black; abdomen piceous, the bases and apices of the femora, the tibiae and antennae pale smoky brown, the tarsi ochreous. Head and thorax subopaque, fairly finely reticulate rugose, the middle of the dorsum of the epinotum, the declivity, petiole and abdomen smooth and shining, the nodes also very superficially reticulate, the abdomen sparsely punctured. Pilosity as in the ☿ and ♀, but much scantier. Head, seen from in front and excluding the eyes, subcircular, a very little longer than wide behind the eyes. The latter very convex and prominent, occupying the anterior half of the sides. The scape is a little shorter than the eye, but a little longer than the 2nd joint of the flagellum, the 1st joint as long as wide, two-fifths the length of the 2nd. Mandibles atrophied, very small, not meeting in the middle when closed. Mesonotum with distinct Mayrian furrows, the scutellum triangular, rounded behind, separated from the mesonotum by a deep groove. Dorsum of epinotum ending on each side behind in a blunt angle, it is as long as the subvertical declivity, which is feebly concave transversely. First node much lower than the 2nd, very convex lengthwise above, about as long as wide. Second node subglobose, not wider than the 1st. Wings hyaline, nervures and stigma very pale straw-yellow.

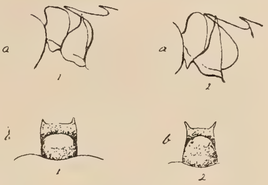

Fig. 82.
1. *Spinidosis type.*
2. var. *glaber.*
a, petiole, profile;
b, petiole, seen from behind.

Hillside, Bulawayo. Types in my collection.

M. spininodis, var. glaber, n. v.

☿, 2·8 mm. Ochreous, the anterior margin of the head and the apical third of the abdomen slightly reddish ochreous. Pilosity entirely absent, clothed only with a short, pale yellowish and almost decumbent pubescence. Sculpture like that of the type of the species, but a little more superficial. The epinotal spines brownish at their apices. The 1st node of the petiole distinctly narrower than in the type of the species and with longer teeth, one and a half times longer than their basal width. The 2nd node is shorter, rather bluntly conical, not with a flattened dorsal face as in the type of the species. Both nodes much higher than long, and much thinner from front to back than in the type of the species. The 2nd node is produced below into a sharp triangular tooth. Otherwise exactly like the type of the species.

Hillside, Bulawayo; Sawmills, Umgusa River, S.A.
(S.A.M., R.M., G.A. colls. Type in my collection.)

TRIBE DACETINI.

STRUMIGENYS MARLEYI, Arnold.

(as race of *Havilandi*, Forel, p. 378.)

Having recently seen the paratypes of *Havilandi*, Forel, (*leg.* Haviland, *ex* Natal Mus. coll.), it becomes apparent that *Marleyi* should stand as a distinct species. In addition to the characters given on p. 378, it also differs in the following features from *Havilandi.* The colour is a pale raw umber, much darker than in *Havilandi,* which in all the specimens I have seen is straw-yellow and not rusty yellowish-red as stated in Forel's description, (this, however, may be due to the long immersion in alcohol, nearly twenty years, having leached the colour out). The mesonotum is more convex lengthwise, and the dorsum of the epinotum is a little wider than long. The dorsal face of the 1st node is about one-quarter wider than long, (nearly twice as wide as long in *Havilandi*) ; the dorsal face of the 2nd node is lenticular, (semicircular in *Havilandi*), and is only half as wide again as long, and not quite twice as wide as the 1st.

TRIBE CATAULACINI.

CATAULACUS INTRUDENS, Smith, race TRISTICULUS, Santschi.

Rev. Zool. Afr., vol. 6, p. 237, ☿, ♀, ♂, 1919.

"☿, 3·7–4 mm. Black ; antennae and tibiae reddish, the rest of the legs and the mandibles rusty brown. Dull, the abdomen less so. The head has about 20 longitudinal and irregular rugae with anastomoses a little less numerous than in *intrudens.* Similar rugae, but more or less arcuate, on the pronotum. About 20 to 22 can be counted on the widest part of the thorax. The occiput and the declivity of the epinotum are transversely rugose. Upper face of the nodes regularly rugoso-sulcate lengthwise. Abdomen finely reticulate and with close longitudinal striae at both ends, more feebly sculptured than in *intrudens.* Head and thorax a little narrower than in *intrudens* Smith and the race *intermedius*, Santschi. Head feebly arcuate at the sides, the posterior margin straight. The eyes are not so large as those of *intermedius,* but larger than of *intrudens* ; seen from in front they project beyond the margin of the head (flatter in *intrudens*). Mandibles finely rugose. Epinotum wider than in *intermedius,* longer and narrower than in *intrudens.* The epinotal spines are shorter than the space between their bases, more divergent than in *intermedius* and less than in *intrudens.* First node of petiole conical, with the anterior face vertical, longer than wide at the base, strongly appendiculate below, with about 4 or 5 sulci above. The 2nd node is a little wider than the 1st, and not so long as wide, narrowed behind. Abdomen oval, the sides feebly arcuate-subparallel, the base emarginate. Pilosity as in *intrudens,* Smith.

♀, 5·5 mm. Width of the head, 1·1 mm.; length, 1·3 mm. Length of the abdomen, 2 mm.; width, 1·3 mm. Head more coarsely reticulate than in the ☿, as much as in the ☿ *intermedius,* the rest of the sculpture as in the ☿, and the shape as in the ♀ of *C. Ebrardi,* Forel. Wings yellowish with brownish nervures.

♂, 4 mm. Head and thorax with feebler and more widely spaced rugae than in the ☿, they are also effaced in front and behind. Abdomen without striae, only reticulate. Pilosity longer and more abundant than in the ☿, especially on the abdomen. The major diameter of the eyes is equal to their distance from the base of the mandibles and to the width of the front of the head. Occipital margin straight, the angles bidentate. The epinotal teeth are one-sixth the length of the space between their bases, which is barely concave. First node of petiole less narrowed behind than in the ☿, its anterior face reticulate. Abdomen pyriform."

Port Elizabeth, (T. Reeve *leg.*), *ex* Albany Mus. coll. Type in my collection.

Tribe PHEIDOLINI.

Pheidole capensis, Mayr, var. modestior, Santschi.

Bull. Soc. Vaud. Sc. Nat., vol. 52, p. 337, ♃, ☿, 1919.

♃, 4 mm. Smaller than the type of the species and of a darker colour, especially the abdomen, which is dark brown. The occipital emargination is deeper and more angular at the apex, the sides of the head more convex. The promesonotum is narrower than in the type of the species, and the posterior lateral angles of the pronotum more acute. The 2nd node of the petiole is relatively wider and more angularly produced on each side. The scapes are a little longer. Otherwise like the ♃ of the type of the species.

☿, 2 mm. Head dark brown. Posterior margin of the head more concave, the lateral angles much more widely rounded than in the ☿ of the type of the species. The 2nd node with more angular sides. Otherwise like the ☿ of the type of the species.

Majuba Nek, C.P., *ex* Albany Mus. coll.; type in coll. Santschi.

TRIBE CREMASTOGASTRINI.

CREMASTOGASTER OROBIA, Santschi.

Bull. Soc. Vaud. Sc. Nat., vol. 52, p. 343, ☿, 1919.

☿, 2·6–3·5 mm. Black; mandibles, clypeus at the sides, flagellum and tarsi dark brown. Head and thorax dull, except the median posterior third of the head and the declivity of the epinotum, which are smooth and shining. Head fairly sharply and closely striate longitudinally, the shining area on the vertex superficially reticulate and finely punctured. Mandibles dull, longitudinally striate. Thorax and 1st node of petiole finely reticulate-punctate, the former with a few fine longitudinal striae on the pronotum and several rugae on the dorsum of the epinotum, the 2nd node nearly smooth. Abdomen smooth and shining. A few erect hairs on the clypeus and nodes, elsewhere there is only a fine, oblique and rare pubescence. Head quadrate, excluding the mandibles, as wide as long, the sides fairly convex, the posterior margin almost straight. The eyes are placed just behind the middle of the sides. The scapes extend beyond the posterior margin of the head by a length equal to twice their own apical width. First and 2nd joints of the flagellum longer than wide, the 3rd wider than long. Promesonotum nearly one-fourth longer than wide, fairly flat above, convex in front, the promesonotal suture feebly indicated, the mesonotum with a weak median carinula, its declivity short and oblique. Dorsum of epinotum widened posteriorly, as long as wide at the base; the epinotal teeth fine, short, directed obliquely upwards and outwards, as long as their basal width and about one-third as long as the space between their bases. First node trapezoidal, the anterior angles rounded, wider in front than long; 2nd node with a median groove.

Matroosberg, C.P., 4500 ft. (R. W. Tucker *leg.*), *ex* S.A.M. coll.

Type in coll. Santschi. (S.A.M., G.A. colls.)

C. ACACIAE, Forel, var. GENEROSA, Santschi.

Loc. cit., p. 343, ☿.

"☿, 3·4 mm. Reddish brown. Front of the head and the clypeus smooth or less strongly striate than in var. *victoriosa*, Santschi. Dorsum of the epinotum more distinctly striate lengthwise in the smaller workers. The rest smooth and shining as in *victoriosa*. Head and thorax a little narrower, the epinotal spines slender, one and a half times longer than thick, much shorter than in *victoriosa*. The 1st node is also a little narrower in front; otherwise like *victoriosa*.

♀, 8 mm. Reddish ochreous. Mandibles, flagellum and apex of abdomen somewhat darker, the wings smoky brown, nervures brown. Smooth and shining. Mandibles and sides of epinotum striate, the cheeks striolate. Erect pilosity moderate.

Head about one-sixth wider behind than long (excluding the mandibles), one-fourth wider behind than in front. The posterior margin straight. The sides moderately convex, the eyes occupying the median fourth. Masticatory margin of the mandibles oblique, with 5 teeth. Clypeus convex, not carinate. The frontal sulcus reaches the anterior ocellus. The scape just reaches the posterior margin of the head; 3rd to 5th joints of the flagellum wider than long. Frontal carinae shorter than the frontal area, the latter longer than wide. Thorax a little narrower than the head. Epinotum bidentate, the scutellum almost overhanging it. First node of petiole trapezoidal, wider in front than long. Second node impressed behind."

Durban, (C. P. v. d. Merve *leg.*); type in coll. Santschi.

C. Bulawayensis, Forel, var. rufescens, Santschi.

(*C. Sjoestedti*, race *bulawayensis*) Rev. Zool. Afr., vol. 6, p. 236, 1919.

"☿, 2·6–4 mm. Of a bright reddish brown, the head and margins of the abdominal segments somewhat darker. The fine striae on the front of the head extend back less far than in the race. The epinotal teeth are very small, half as long as in *bulawayensis*. The 1st node of the petiole slightly wider in front. Otherwise similar."

Natal, (Haviland *leg.*), *ex* Natal Mus. coll. Type in coll. Santschi.

C. Bulawayensis, var. zulu, Santschi.

Ann. Soc. Ent. Belg., vol. 60, p. 15, ☿, 1920.

"☿, 3·2–3·5 mm. Black, mandibles, club of antenna and last tarsal joints blackish brown. The epinotal teeth shorter and more obtuse. Otherwise like *bulawayensis*, Forel.

♀, 10 mm. Black, flagellum, tarsi, mandibles, and anterior margin of the head dark rusty red. The space between the ocelli and the eyes, the mesonotum, scutellum, and abdomen shining, smooth and with a few small punctures. Head rectangular, slightly longer than wide, narrowed in front, the sides and hind margin straight. Thorax narrow, the epinotal teeth reduced to mere tubercles. The 1st segment of the petiole is almost square, the sides parallel. The 2nd segment is a little wider than long, without groove or impression. Wings slightly infuscate, the anterior wing 8·5 mm. long."

M'fongosi, Zululand, (W. E. Jones *leg.*), *ex* Natal Mus. coll. Type in coll. Santschi.

TRIBE PLAGIOLEPIDINI.

PLAGIOLEPIS FUNICULARIS, Santschi.

Bull. Soc. Vaud. Sc. Nat., vol. 52, p. 344, ☿, 1919.

☿, 1·9–2 mm. Yellowish red-brown, the abdomen and back of the head a little darker in some specimens; legs and antennae straw-yellow, the flagellum apically and femora somewhat browned. Smooth and shining. An exceedingly fine and not dense pubescence all over, the abdomen with a few longer outstanding hairs. Head rounded, as long as wide, widest in the middle, a little narrower in front than behind, the posterior margin feebly concave, the posterior angles narrowly rounded. Eyes fairly large, placed just in front of the middle of the sides. Clypeus subcarinate medially in the posterior half. Mandibles shining, with 5 teeth. The scapes extend beyond the hind margin of the head by as much as their apical width. Second joint of the flagellum nearly twice as wide as long, the 3rd and 4th subequal, longer than wide. Pronotum convex, two-fifths wider than long in the middle; mesonotum one-third wider than long, about two-thirds longer than the metanotum; the three sutures fairly distinct but not deep. Dorsum of epinotum short, shorter than the metanotum, merging gradually into the much longer and very oblique declivity. Scale of petiole subquadrate, the dorsal edge convex transversely.

Natal, (Haviland *leg.*), *ex* Natal Mus. coll.; type in coll. Santschi.

TRIBE CAMPONOTINI.

CAMPONOTUS (s.g. MYRMAMBLYS) ORITES, Santschi.

Bull. Soc. Vaud. Sc. Nat., vol. 52, p. 346, ☿, 1919.

♃, 7 mm. Head black; thorax and abdomen dark brown, the femora dull ochreous, antennae, tibiae and tarsi reddish ochreous. Mandibles reddish brown or piceous. Smooth and shining, microscopically reticulate-rugulose. A few small piligerous punctures on the cheeks and on the frons between the frontal carinae. Clypeus, mandibles, scale and abdomen with a few longer, yellowish and exserted hairs. Head widest across the eyes (which are placed at the posterior third), as wide there as long, not quite half as wide again there as across the anterior margin ; the posterior margin nearly straight, the posterior angles narrowly rounded. The frontal carinae, which extend back to the level of a line joining the anterior margin of the eyes, are half as far again from the sides as they are from each other. Mandibles striato-punctate, 5-dentate. Median area of clypeus feebly coriaceous, slightly wider than long, moderately convex, not carinate, with a row of 4 or 5 deep punctures just on the anterior margin. The scapes extend beyond the hind margin by half their apical width. Pronotum convex in front, almost flat above, half as wide again as long. Mesonotum as long as wide in front, three times as wide there as at the meso-epinotal suture. From that point the thorax is much constricted, so that the dorsum of the epinotum is parallel-sided, two and a quarter times longer than wide. It is slightly shorter than the subvertical declivity and merges into it by a widely rounded angle. L=3 H. The scale of the petiole is nearly twice as high as wide, rounded transversely above, flat behind, convex from side to side in front. The base of the abdomen subtruncate. Femora strongly compressed, the tibiae less so or subcylindrical, not setose.

☿ media, 5-5·6 mm. Head trapezoidal, more narrowed in front than in the ♃. Scapes longer, extending to the middle of the pronotum. Clypeus subcarinate over the basal half ; legs paler. The scale a little thicker than in the ♃.

☿ minor, 4·3 mm. Legs straw-yellow ; the clypeus more distinctly carinate on the basal half than in the ☿ media. The scape extends back nearly as far as the posterior margin of the pronotum. The epinotum is longer, the dorsum fully as long as the declivity. Scale thicker and lower.

Matroosberg, C.P., 5000 to 7000 ft. (R. W. Tucker *leg.*), *ex* S.A. Mus. coll. Type in coll. Santschi.

The *C. orinodromus*, Santschi, *loc. cit.*, p. 347, is without doubt the same species as *orites*. The specimens sent to Dr. Santschi for determination were all collected in the same place by Mr. Tucker and from the same nest. Moreover, the differences cited by Santschi are trivial, such as might be expected to occur within the range of variation amongst the individuals of one nest.

C. (s.g. MYRMOTURBA) CLEOBULUS, Santschi.

Rev. Zool. Afr., vol. 6, p. 238, ♃, ☿, 1919.

"♃, 8 mm. Black ; mandibles, except at the base, reddish. Flagellum and tarsi brown. Apical margins of abdominal segments slightly yellowish. Pilosity mediocre, a little shorter than in *thales*, Forel. Sculpture as in *thales*, but there are more pit-like punctures between the frontal carinae, and those of the mandibles are larger. Head wider behind than in *thales*, (2·2 mm. long, 2·1 mm. wide). The posterior margin straight; the sides, feebly convergent in the posterior half, become more strongly convergent in front. Eyes mediocre, two-thirds the length of their distance from the posterior margin. The site of the lateral ocelli is indicated by wide elongated impressions. The frontal sulcus is weak and does not extend beyond the frontal carinae, the latter are nearer together in front than in *thales*. Clypeus strongly carinate, with a lobe which is shorter than in *thales*. Mandibles reticulate, with 5 or 6 rounded teeth. The scape, 2·1 mm. long, extends a good deal beyond the posterior margin. Frontal area short. Thorax convex from one end to the other, the angle of the epinotum more marked, the declivity more oblique than in *thales*. Metanotum distinct, short. Profile high, the summit less convex than in *thales*. Posterior tibiae 2·3 mm. long, unarmed. Abdomen of moderate size.

☿, 6 mm. Head rectangular, one-fifth longer than wide. The posterior margin barely convex, the posterior angles rounded, the eyes placed in the posterior fourth of the sides. The scape extends beyond the posterior margin by a third of its length. Clypeus carinate as in the ♃, the angles of the lobe more oblique. Dorsum of epinotum straight, considerably longer than the declivity, and forming with it an angle of about 150°. Scale thicker and more convex in front than in the ♃, thinner than in *thales* ☿."

Drakensberg, Natal, 11,000 ft. (Haviland *leg.*), *ex* Natal Mus. coll. Type in coll. Santschi.

C. MACULATUS, race PICTIVENTRIS, Mayr, var. IMMACULIFRONS, Santschi.

Loc. cit., p. 349.

I cannot agree with Dr. Santschi in granting these specimens a distinct varietal name. The specimens which were sent to him were compared with cotypes of Mayr, and, as I have pointed out before, differ from them only to a very trivial extent. It is questionable whether it is worth while to attach a distinct name to every petty variation exhibited in this extraordinary variable species.

C. MACULATUS, race RADAMOIDES, Forel, var. CATARACTAE, Santschi.

Loc. cit., p. 239, ♃, ☿.

"♃, 11–12 mm. Head black; dorsum of thorax and greater part of the abdomen brownish black. Mandibles dark red. Sides of the thorax as in the type of the species, coxae, femora, scale, two large confluent spots on the base of the abdomen, and two others more or less distinct and equally diffuse on the sides of the second and third segments, ochreous yellow, more or less reddish. Flagellum, tibiae and tarsi of a deeper reddish ochreous. Middle of the scapes brownish. The reddish pilosity shorter and a little less abundant than in the type of the species. A few fine hairs are on the cheeks. Pubescence very scanty, even on the limbs. Tibiae not setose. Head and upper surface of thorax slightly dull, the rest shining. Reticulate, in greater part densely reticulate-punctate. Abdomen finely reticulate-shagreened transversely. Head wider behind than in front (2·2 to 2·3 mm. wide; in front 1·5 mm.), from 2·4 to 2·5 mm. long, the sides subrectilinear in their median fourth, and convex in front and behind. The posterior margin straight with the angles much rounded. Eyes a little smaller than their distance from the posterior margin. Frontal carinae nearly twice as far apart behind as in front. Clypeus strongly carinate, the lobe shorter than in the type of the species. The scape, 2·5 mm. long, extends by nearly a fourth of its length beyond the posterior margin. Thorax relatively shorter than in the varieties *liocnemis* and *madecassa*. The scale is slightly higher. Posterior tibiae cylindrical, slightly compressed, 2·5–3 mm. long. Otherwise like *liocnemis*, from which it differs chiefly by the wider and shorter head, which is also shorter than in the race *Hannae*.

☿, 9 mm. Entirely rusty reddish, except the diffuse spots on the abdomen."

Cataract Island, Victoria Falls, (Arnold *leg.*); type in coll. Santschi.

C. MACULATUS, race AGRICOLA, Forel, var. TACITUS, Santschi.

Loc. cit., p. 240, ♃, ☿.

"♃, 8·5 mm. Head and thorax rusty ferruginous, flagellum, legs, scale and front of the abdomen reddish yellow, the rest of the abdomen reddish brown, with the margins of the segments yellowish. Top of the head and scapes slightly browned. Margin of the mandibles and clypeus blackish. A scanty reddish pilosity margins the abdominal segments, but is lacking on the legs, which are only sparsely pubescent. Densely reticulate and dull. The abdomen transversely striolate and nitidulous. Clypeus and mandibles fairly shining. Head 2·1 mm. wide behind the eyes, 2·4 mm. long. The posterior margin straight, the angles rounded, the sides convergent in front but only a little convex. Eyes behind the middle of the sides and shorter than their distance from the posterior margin. Frontal carinae but slightly divergent in their posterior two-thirds. Clypeus strongly carinate, the lobe straight, a little wider than in, and as long as in *thales*, Forel. Mandibles punctate, with 7 teeth. Thorax as in *thales*, but the metanotum is distinct. The dorsum of the epinotum is longer than the declivity. Scale thin. Otherwise as in *agricola*.

☿. This agrees with the description of that of *agricola*."

Natal, (Haviland *leg.*), *ex* Natal Mus. coll. Type in coll. Santschi.

C. MACULATUS, race HANNAE, Santschi.

Bull. Soc. Vaud. Sc. Nat., vol. 52, p. 349, ♃, ☿.

"☿ 8–12 mm. The ♃ is coloured like the race *cavallus*, Santschi. The yellow spot on the front of the abdomen is a little less extensive. Pilosity less abundant, especially on the head above and below. Cheeks without exserted hairs. The abdomen and posterior angles of the head are a little less shining, the sculpture being more pronounced. The thorax is shorter and forms from front to back a more accentuated curve, the two faces of the epinotum not distinctly defined from each other. The metanotum is longer, about twice as wide as long (three times wider than long in *cavallus*). The scale is thicker and more convex in front. Tibiae compressed, not setose.

☿ media. Paler than in *cavallus*.

☿ minor. Only the dorsum of the thorax and abdomen a little browner. Thorax also more convex. Otherwise like *cavallus*.

This race inclines in the direction of *atramentarius* and *radamoides*, Forel. It greatly resembles *cavallus*, Santschi, in colour and general form, but the shorter and more convex thorax makes it a distinct race. Victoria Falls."

Type in coll. Santschi.

C. COMPRESSUS F. race PROBATIVUS Santschi.

Since writing the first paragraph on p. 634, 1917, a long correspondence passed between Dr. Santschi and myself, which led eventually to my sending him the specimens received from Dr. Forel, and on which these conclusions were based. As a result of his examination, Dr. Santschi concludes that these specimens were wrongly named by Dr. Forel, and that they represent a new race *probativus* of *C. compressus* F. (see Bull. Soc. d'Hist. Nat. de l'Afriq. du Nord, t. xii, pp. 73, 74 nota, 1921). The description which follows on p. 634, from line 14 onwards, is therefore of that race and not of the race *sexpunctatus*. *C. compressus*, an Indian ant, has hitherto been regarded as a race of *maculatus* ; I do not know when, and by whom, it was raised to specific rank.

C. (s.g. MYRMOSAGA) FAVORABILIS, Santschi.

Loc. cit., p. 349, ☿.

"☿ minor, 4·3 mm. Brown; mandibles, clypeus, first joint of the flagellum, scape, tarsi and pronotum, rusty red. Coxae yellow. Ventral surface of abdomen and the legs reddish yellow. The abdominal segments narrowly margined with yellow. Smooth and shining, very finely reticulate, the epinotum and abdomen below very finely and transversely reticulate. Some fine, pointed, erect, and long yellowish hairs on the thorax, which are more abundant on the head and abdomen. Pubescence yellowish, fairly adjacent, sparse on the abdomen, fairly abundant on the pronotum, longer and more distantly distributed on the head, especially on the cheeks and clypeus. With the exception of some hairs on the articulations of the femora and tibiae, the legs, like the antennae, are only pubescent. Head about one-fifth longer than wide, rounded behind the eyes, the latter prominent and occupying the posterior fourth of the sides. The sides of the head are straight and converge a little in front. Clypeus carinate as far as the anterior margin. The frontal carinae extend back as far as the level of the middle of the eyes, where they are as wide apart as they are long. Mandibles smooth, with large punctures, and with 6 teeth. The scape extends beyond the occipital margin. Thorax fairly elongate, the pronotum longer than wide. Mesonotum longer than wide, distinctly narrower and higher in front than the pronotum, the mesoepinotal suture not very distinct, the promesonotal well defined. Dorsum of epinotum clearly concave from front to back, convex from side to side, not marginate, higher in front than behind, from one-third to one-half longer than the declivity, with which it forms a rounded angle. The declivity is convex in all directions, and not marginate. The scale is about twice as high as thick (long), the summit thin, flat behind, convex in front, higher than the declivity of epinotum. The anterior face of the abdomen almost half as high again as the scale. Tibiae cylindrical."

Nyamandhlovu, S.R., 1 specimen. Type in coll. Santschi.

3. *South African Rhagionidae (Diptera) in the South African Museum.*

By Professor M. Bezzi.

The scarcity of the family *Rhagionidae* (=*Leptidae*), taken in its narrowest sense (that is, after the exclusion of the *Hilarimorphinae*, of the *Xylophaginae*, and of the *Coenomyinae*), is one of the most striking features of the Ethiopian Dipterous Fauna. From more than 300 species known from all parts of the world only the following are recorded from the Ethiopian region :—

1. *Leptynoma sericeum*, Westwood, 1876, Damaraland.
2. *Lampromyia argentata*, Bigot, 1885, Cape.
3. *Atherix binominata*, Bequaert, 1921 (=*longipes*, Loew, 1863, nec Bellardi, 1861), Bloemfontein.
4. *Atherix braunsi*, Bequaert, 1921, Stellenbosch.
5. *Atherix disciclara*, Speiser, 1914, Cameroon.
6. *Chrysopilus fulvidus*, Bigot, 1891, Assinia.
7. *Chrysopilus testaceus*, Loew, 1858, Caffraria.
8. *Chrysopilus cricosphaerota*, Speiser, 1914, Cameroon.
9. *Chrysopilus obscuripes*, Speiser, 1923, East Central Africa.

Very singular also is the complete absence of *Rhagio* (=*Leptis*), the typical genus of the family. On the other hand, the abundance of the genus *Atherix* (+*Atrichops*), both in species and individuals, is very characteristic. Out of 30 species of *Rhagionidae* in the South African Museum, 20 (that is 66·6 per cent.) belong to that genus.

The importance of the family is great even from an economic point of view, because it contains some blood-sucking kinds. One of these is present in the collection, and is described here for the first time as belonging to the Australian genus *Atherimorpha*. Others, like the species of *Atherix*, are unique in habits, the females congregating in dense clusters for oviposition, after which the young larvae feed first on the cluster of dead bodies before reaching the water.

The African genera may be distinguished as follows :—

1. (2) Front tibiae with a strong spur at end; face flat, narrow, and elongate, the antennae being inserted above the middle of the eyes; proboscis longer than the head and often very elongate, directed downwards; front tarsi without tactile hairs; wings cuneate at base, with the alula linear and provided with a prominent basal tooth; cubital fork short and broad; calypters much reduced (subfam. *Vermileoninae*). *Lampromyia*, Macq.

2. (1) Front tibiae without spur; face broad, short, and with sockets, the antennae being inserted below the middle of the eyes; proboscis shorter than the head and often very short if elongate, directed forward; front tarsi often with tactile hairs below; wings not cuneate, with rounded alula, and with long and narrow cubital fork; calypters well developed.

A. (B) Proboscis shorter than the head, antennal style not annulated.

3. (12) Hind tibiae with two spurs at end; eyes not bisected (subfam. *Rhagioninae*).

4. (9) Third antennal joint reniform, with dorsal arista; antennae inserted very low; wings with closed anal cell and with a short second longitudinal vein, which ends very close to the end of the first vein.

5. (6) Sides of face quite bare in both sexes; frons bare or only with a few scattered hairs; eyes of male contiguous for a great length, with the anterior areolets distinctly enlarged; frons of female very narrow; palpi with short and scarce hairs; pleurae nearly bare *Atrichops*, Verr.

6. (5) Frons and sides of face more or less densely but always hairy; eyes of male with equal areolets, more or less broadly separated; frons of female broad; palpi densely hairy; pleurae more hairy.

7. (8) Eyes of male somewhat contiguous; legs not specially inflated, with simple hind praetarsi; hind tibiae with long spurs . *Atherix*, Meig.

8. (7) Eyes of male broadly separated; legs much thickened, with dentate praetarsi and with small spurs on the hind tibiae; hypopygium much inflated and pendulous . . . . *Pachybates*, gen. nov.

9. (4) Third antennal joint not reniform, with terminal arista; wings with typically open anal cell and with long second vein.

10. (11) Third antennal joint rather elongate and gradually drawn out into a thickened arista; tibiae with three rows of distinct spicules; second longitudinal vein ending at a considerable distance from the first; frons equally broad in both sexes . . . . *Atherimorpha*, White.

11. (10) Third antennal joint short and with a thin, hair-like arista; tibiae with no differentiated spicules; second vein ending close to the end of the first; eyes of male connected or very narrowly separated. Not found as yet in the Ethiopian Region . . . . *Rhagio*, Fabr.

12. (3) Hind tibiae with only one terminal spur; eyes bisected; second longitudinal vein short, curved upwards at end, and thus very close to the end of the first vein (subfam. *Chrysopilinae*) . *Chrysopilus*, Macq.

B. (A) Proboscis longer than the head and directed obliquely forward; third antennal joint forming an 8-annulated complex; eyes bisected; hind tibiae with two spurs (*Arthrotelinae*) . . *Arthroteles*, gen. nov.

SUBFAMILY VERMILEONINAE.

Gen. LAMPROMYIA, Macquart, 1835.

This genus is distinguished from the typical genus *Vermileo*, Macquart in having a long proboscis and a non-pulvilliform empodium. The genus *Leptynoma*, Westwood, 1876 (originally described from South Africa as belonging to the Asilidae, like the European genus *Apogon*, Perris=*Vermileo*), is certainly synonymous with it. The Mediterranean species, like *L. cylindrica* and *pallida*, differ only in having the face more produced below and forwards.

These flies are very interesting on account of the singular habits of their larvae which live in the sand like those of the ant-lions, being, however, very different in the shape of the body.

Of the forms described below, *L. sericea* and *argentata* are probably one species, while *brevirostris* is very different from the others on account of its strong and relatively short proboscis. They are as follows :—

1 (6) Proboscis thin and longer than one-half of the body; third antennal joint short and with a thin arista; front tibiae with small and less distinct terminal spur; thorax with a broad, blackish median stripe; abdomen entirely yellowish, clothed with silvery dust, and having a deeply punctate area at the base of each segment.

2. (5) Upper branch of cubital fork S-shaped, curved above at end and set obliquely or even almost perpendicularly; thoracic median stripe deep black.

3. (4) Third antennal joint blackish; lateral dark stripes of back of mesonotum broad; second longitudinal vein with a rounded bend, and not appendiculate; upper branch of cubital fork oblique, ending not much before the wing-tip; fourth posterior cell open; first posterior cell narrow . . . . *sericea*, Westw.

4. (3) Third antennal joint pale yellowish; lateral dark stripes narrow; second vein angularly bent and there provided with an appendix; upper branch rather perpendicular and ending much before the wing-tip; fourth posterior cell closed and provided with a long stalk; first posterior cell broad . . . . . . *appendiculata*, sp. nov.

5. (2) Upper branch of the cubital fork rather straight and set almost horizontally, ending near wing-tip; thoracic middle stripe reddish-brown; antennae entirely pale yellowish; bend of second vein rounded and not appendiculate; fourth posterior cell closed at wing-border; first posterior cell narrow; all the veins yellowish . . . . *argentata*, Big.

6. (1) Proboscis rather thick and only a little longer than the head; third antennal joint elongate, with thickened arista; front tibiae with a long and strong terminal spur; thorax with three narrow black stripes in front; pleurae black-spotted; abdomen with black bands and black end, without silvery dust and without punctate basal area on each segment; hind legs black, with white rings; wings with oblique upper branch of cubital fork and with the first posterior cell broadening outwardly . . . . *brevirostris*, sp. nov.

1. *Lampromyia sericea*, Westwood.

Trans. Ent. Soc. London, 1876, p. 517, pl. vi, fig. 7 (*Leptynoma*).

Described from Damaraland. In the South African Museum there is a male specimen from Matroosberg, 3500 ft., Ceres Div., November 1917 (R. M. Lightfoot), which may be considered as belonging to the present species. As Westwood's original description consists only of a few words a full description is necessary.

♂. Length of body, 13 mm.; of wing, 10 mm.; of proboscis, 6 mm. Occiput black, densely clothed with opaque grey dust, with pale yellowish hairs, and with a row of yellowish thin cilia at eyes-border, these cilia becoming longer below. Frons parallel-sided, narrow, being not broader than the distance between the basal ocelli; it is black and quite bare, with a little dark grey dust in front; the ocelli are of large size, placed on a prominent tubercle, which, however, is not visible in profile, the frons being concave at the vertex. Eyes bare, with the upper areolets not distinctly enlarged; they are of large size, ovate, their vertical diameter being about twice as long as the horizontal one; in profile they form almost the whole head, the face only being prominent. Face in the middle twice as broad as the frons, convex and rather prominent, but not with sockets, more produced below than the lower corner of the eyes; it is densely clothed with white dust and almost bare, having only a few thin white hairs below on the sides. Antennae inserted a little above the middle of the eyes, close to each other at base; they are carried obliquely above and are about as long as the horizontal diameter of the eyes; the two basal joints are yellowish, the first being twice as long as the rather globular second, both with a few very short hairs below, and bare above; third joint black, shortly conical, shorter than the first joint; arista terminal, black, bare, distinctly shorter than the whole antenna. Palpi blackish at end, yellowish at base, curved upwards; proboscis black, reddish above at base, long and thin, reaching nearly the hind border of the third abdominal segment. Thorax short and convex, nearly bare, with very short pubescence in front; on the back it is reddish, with a silky sheen; the middle stripe is broad, black with reddish-brown sheen, complete in front but abbreviated behind; the sides of this stripe are shiny white; above the notopleural line there is a broad reddish-brown stripe on each side, interrupted at the suture. Humeral calli prominent, reddish-sericeous, with a brown stripe below. Pleurae quite bare, dark reddish, with sericeous sheen. Scutellum small, semicircular, flat above, quite bare, reddish, with a broad blackish middle stripe which does not reach the hind border. Mesophragma convex, reddish, shiny below, clothed with greyish dust on the upper half. Halteres with yellowish stalk and blackish knob, long and thick; calypters very small, yellowish, bare at border. Abdomen very elongate, about four times as long as the thorax ; it is nearly parallel-sided, being only a little narrowed towards the base, and rather flat ; there are eight visible segments, the first and the last shorter, all the others being of about the same length ; each segment has a semicircular area at base with two rows of deep puncti ; it is quite bare, even at base, with a very short, thin, white pubescence at sides near the end ; entirely reddish, with no distinct dark markings, and entirely clothed with dense silvery dust ; venter entirely reddish, unspotted, but without silvery dust. Male genitalia erect, reddish, with short whitish pubescence. Legs of the two anterior pairs thin and short, entirely yellowish, unspotted, with the tarsi blackened at end ; legs of hind pair much longer and thicker, reddish, with the femora, tibiae, and tarsi fuscous at end, the praetarsi distinctly swollen and as long as the other joints taken together ; pubescence very short ; the two terminal spurs of the four posterior tibiae are long, strong, and yellowish ; claws black, with narrow reddish base. Wings shorter than the body, rather narrow, cuneate at base, without prominent alula ; at the extreme base of the wing, at the root of the linear alula, there is a prominent tooth. First vein ending beyond the middle of the wing ; praefurca long ; second vein broadly rounded at end ; cubital fork proportionally short and broad, with the upper branch rather S-shaped but less oblique, ending at a short distance from the wing-tip ; discal cross-vein before the middle of the discoidal cell ; first posterior cell broadly open at end ; third posterior cell at end as broad as the two preceding cells together ; fourth posterior cell and anal cell narrowly open. Axillary lobe long and narrow. Costa becoming thinner after the tip of the wing, but the ambient vein complete. The wings are greyish hyaline, iridescent. There are fuscous spots on the praefurca, below the stigma, forming a dark band in the narrowed median part of the marginal cell ; the last portion of the second vein, after the bend, is edged with fuscous. The veins are yellowish at base and darkened in the distal part.

2. *Lampromyia appendiculata*, sp. nov.

Closely allied to the preceding, and possibly only a variety of it, but distinct in some important peculiarities of wing-venation.

Type ♂, from Ceres Div., Matroosberg, 4500 ft., November 1914 (R. M. Lightfoot).

♂. Length of body, 14 mm. ; of wing, 9·5 mm. ; of proboscis, 6·5 mm. Head and its appendages as in the preceding, but the antennae and the palpi entirely yellowish ; the ground colour of the face below the white dust is distinctly reddish ; the proboscis is a little longer. Thorax and scutellum as in the preceding species, but there are no dark lateral stripes above the notopleural line, only a narrow, reddish-brown post-sutural stripe being present above the root of the wings. Pleurae of a lighter reddish colour. Calypters and halteres as in the preceding. Abdomen as in the preceding species, but more distinctly narrowed towards the base ; venter with a dark stripe in the middle towards the end ; male genitalia shorter, the upper lamella being truncate at end. Legs as in the preceding species, but distinctly lighter, even those of the hind pair being more yellowish than reddish. Wing-pattern also as in the preceding species, but even the upper branch of the cubital fork is edged with fuscous. Origin of the second vein much nearer the discal cross-vein which is placed much before the middle of the discoidal cell ; terminal part of the second vein bent at a right angle, and there strongly stumpy ; upper branch of the cubital fork S-shaped and placed about perpendicularly, ending much before the wing-tip ; first posterior cell as broadly open as the second ; fourth posterior cell with a long stalk. All the veins of the terminal part of the wing are distinctly thicker and blacker than in the preceding species.

3. *Lampromyia argentata*, Bigot.

Ann. Soc. Ent. Fr. (6), v, Bull., p. 68 (1885).

Possibly only a form of *L. sericea*, distinguished by the paler coloration and by some particularities of wing-venation.

I have seen Bigot's type, a male specimen from Hex River, 10th January 1883. Head as in *L. sericea*, but the occiput and the frons more densely white dusted ; antennae with the third joint quite reddish ; palpi of a paler reddish colour. The thorax is much paler, with the broad middle stripe very light reddish brown. Abdomen and legs as in *L. sericea*, but distinctly paler ; the male genitalia are apparently the same. Wings equal in shape and nervation, but distinctly more yellowish and with paler veins ; second longitudinal vein similarly shaped ; upper branch of cubital fork straighter and placed more horizontally, thus ending nearer to the wing-tip ; first posterior cell narrower ; fourth posterior cell closed or even shortly stalked ; anal cell more narrowly open.

4. *Lampromyia brevirostris*, sp. nov.

Very distinct from all the preceding forms on account of its short and strong proboscis, of the long spur on the front tibiae (agreeing in this character with the Mediterranean typical species), and of the very different abdomen, which is moreover quite devoid of silvery dust.

Type ♂, from Zululand (M'fongosi), March 1917 (W. E. Jones); the ♀ type is without precise locality, but bears the following label: "bred by Rev. N. Abraham from a larva kept for 2 years in captivity, April 1920"; an additional ♂ from East London, 25/12/1923 (H. K. Munro).

♂ ♀. Length of body, 11–12 mm.; of wing, 9–10 mm.; of proboscis, about 2 mm. Occiput black, dark grey dusted, with pale hairs near the eyes-border, longer and more abundant underneath. Eyes more rounded than in the preceding species, their horizontal diameter being about as long as the vertical one. Frons black, grey dusted, broader in the male than the distance between the basal ocelli; twice as broad in the female. Face pale yellowish, white dusted, clothed with scarce, thin, whitish pubescence; in the male it is less produced than in the other species. Antennae distinctly longer than in the preceding species, chiefly because the third joint is elongate, being longer than the first joint and longer than the thickened terminal style; they are yellowish, more or less infuscated, with the third joint fuscous at end. Palpi blackish. Proboscis short and strong, only a little longer than the vertical diameter of the head; it is black below and at end, red above near the base. Thorax reddish, a little shiny, with bronze tomentum; on the back there are three black stripes, the middle one dilated behind the suture and prolonged across the middle of the scutellum; the lateral ones are distinct only behind the suture, being represented in front of the suture only by a short, blacker stripe. Pleurae shiny reddish, with broad black spots on meso-, ptero-, and sterno-pleura; they are quite bare, while the back of the mesonotum bears a short darkish pubescence. Scutellum small, rounded, flat above, reddish with a black median stripe and with short dark pubescence; mesophragma shining reddish, grey dusted above, with blackish lateral spots in the female. Calypters bare, very narrow, conical, dirty yellowish. Halteres with yellowish stalk and black knob. Abdomen distinctly stalked in the male, the second, third, and fourth segments being cylindrical and narrower than the others, while in the female this is not the case. Both sexes are entirely without silvery dust, and there are no punctate basal areas of the segments, as in the Mediterranean species ; it is shiny reddish, with black spots at the hind border of the segments and at the sides, in the male the three last segments being entirely black above ; venter reddish in both sexes ; pubescence short and blackish ; male genitalia black above and reddish below. Front coxae yellowish, unspotted ; middle and hind coxae reddish and black spotted at end. The four anterior legs are entirely pale yellowish, with only the last tarsal joints black ; hind legs stronger and longer, with club-shaped femora and tibiae, the femora yellowish, broadly black before the end, the tibiae black, with narrowly whitish base ; hind tarsi black ; the praetarsi with a whitish base ; front tibiae with a strong and long yellowish spur, like that of the Mediterranean species. Wings of the usual shape, proportionately short and narrow ; they are greyish hyaline, iridescent, with irregular dark spots at the praefurca, at the small cross-vein, in the middle of the marginal cell, and at the wing-tip ; some veins are moreover edged with fuscous. Second vein regularly bent and not appendiculate (but in one specimen angular and appendiculate) ; upper branch of cubital fork less sinuous, but oblique and ending considerably before the wing-tip ; small cross-vein placed near the base of the discoidal cell ; first posterior cell broadening towards the end and there broader than the second, fourth posterior cell narrowly open (♀), or closed and stalked (♂) ; anal cell narrowly open or closed at the wing-border.

Subfamily RHAGIONINAE.

Gen. Atrichops, Verrall, 1909.

The species of the present genus are distinguished, in addition to the characters given in the table, by the more elongate and more bare body, and by the prevailing red colour of body, legs, and antennae. Practically, the red antennae and red palpi are sufficient to separate them from any South African species of *Atherix* or of *Pachybates*. But in the Oriental Fauna there are species with black body, and with black antennae and legs, showing, moreover, some scattered hairs on the frons of the female. I have seen also a black, as yet undescribed, species from the Congo. This last species, like *A. disciclara*, Speiser, 1914, shows a deep longitudinal median furrow on the fore part of the frons.

It is possible that the genus *Suragina*, Walker, 1860, is the same as the present one ; and if so, its name must be used for the species now included in *Atrichops*. They are, however, hardly separated from *Atherix*.

The South African species known to me are as follows :—

1. (10) Back of mesonotum reddish, with or without a more or less broad black stripe in the middle ; antennae entirely reddish.
2. (3) Back of mesonotum entirely reddish, without median stripe and without presutural spots ; abdomen quite reddish, without black markings *agramma*, var. nov.
3. (2) Back of mesonotum with black stripe, or entirely black in the middle.
4. (9) Middle black stripe of mesonotum narrow, not extending beyond the dorsocentral lines, which are never whitish striped ; a blackish presutural spot on notopleural depression ; eyes more oval and frons longer.
5. (8) Pleurae entirely reddish, with a blackish spot at upper border of mesopleura ; face yellowish ; hind femora entirely yellowish.
6. (7) Abdomen entirely reddish, even on venter, with a narrow and short black basal stripe . . . . . . *monogramma*, sp. nov.
7. (6) Abdomen with black venter and with broader black markings above. *inaequalis*, sp. nov.♀
8. (5) Pleurae almost entirely black, being reddish only on the propleural region ; face black ; hind femora with a broad blackish ring in the middle *inaequalis*, sp. nov.♂
9. (4) Middle black stripe broad, extending beyond the dorsocentral lines which are marked by whitish narrow stripes ; no blackish presutural spots ; face black ; eyes distinctly more rounded and frons shorter. *bivittata*, sp. nov.
10. (1) Back of mesonotum and pleurae entirely black, with a narrow reddish notopleural stripe ; face black ; basal joints of antennae fuscous above ; intermediate segments of the abdomen with complete black basal bands . . . . *binominata*, Beq.

5. *Atrichops monogramma*, sp. nov.

An almost entirely reddish species, distinguished from all the others on account of the peculiar coloration of the pleurae.

Type ♀, a single specimen from M'fongosi, Zululand, December 1916 (W. E. Jones).

♀. Length of body about 10 mm. ; of wing, 9 mm. Occiput entirely deep black, with white shining dust at the side and along the middle of the eyes-border ; behind the vertex there are short yellowish hairs, while on the lower part the hairs are long and white. Frons long and proportionately narrow for a female, the width being one-third of that of one eye, gradually broadening a little forwards ; it is deep black in the middle with a white sheen from the vertex to the ocelli, and on the lower third above the antennae. Eyes broadly oval, apparently unicolourous, with equally small areolets. Antennae inserted much below the middle of the eyes; they are entirely reddish, with a white sheen on the basal joints; the third joint is reniform, its vertical diameter being as long as the two basal joints together; first and second joint with some black hairs above; arista thin, blackish. Face very short, measuring only one-third of the length of the frons; it is shiny yellowish, faintly grey dusted in the middle; the cheeks are white shiny and quite bare. Palpi long, reddish, with some pale hairs; proboscis about as long as the head, entirely reddish, with pale hairs below. Thorax entirely reddish, with more yellowish humeri and paler pleurae; on the back it is rather shiny, with a short black pubescence, longer and more bristly on the notopleural depression; the black middle stripe is entire and equally narrow, not extending laterally beyond the dorsocentral lines, acute at the beginning above the neck and a little dilated at the end in front of the scutellum. The pleurae are opaque, with a broad, shiny white band across the sterno- and meso-pleura; the upper part of this band, on the upper part of the mesopleura, shows a blackish ground-colour and is continued in a spot on the sides of the back, above the notopleural line and in front of the suture; mesopleura with soft white hairs; metapleura shining white with soft white hairs; mesophragma shining black in the middle. Scutellum reddish, shining, with narrow black base, and with blackish hairs on disc and at border. Squamulae pale yellowish, small, bare; halteres yellowish. Abdomen entirely reddish, even on venter, with only a narrow black stripe in the middle of the second and third segments; the pubescence is pale yellowish. Coxae and femora entirely yellowish, with a pale pubescence; front and hind tibiae darkened with blackish pubescence; tarsi black, those of the front pair with tactile hairs below. Wings proportionately long; cubital fork very long; discoidal cell narrow, with the small cross-vein on its basal third; first, second, and third posterior cell of about the same width at end, the fourth being distinctly narrower; anal cell shortly stalked. The veins are blackish, with yellowish base. The wing is yellowish hyaline, iridescent, with the terminal half distinctly darker, the cells sometimes with paler centre; stigma dark yellowish; a faint discoidal infuscation is present, but not forming a definite discal band.

6. *Atrichops monogramma* var. *agramma*, nov.

Exactly the same as the preceding species, but distinct by the complete absence of any black marking on the back of the mesonotum and on the abdomen.

Type ♀, one specimen from Barberton, 5th October 1919 (H. K. Munro). On the thorax there is no trace of median stripe and even of presutural side-spots, the pleurae have the same white shining vertical band, with a dark, not well-delimited spot on upper part of the mesopleura. Abdomen without middle basal stripe and other black markings. Legs the same, but with yellowish, less infuscated hind tibiae; front tarsi with numerous tactile hairs below. Wings similar, both in venation and colouring.

7. *Atrichops inaequalis*, sp. nov.

Perhaps only a variety of *A. monogramma*; but the male is very different from both, and it is described here separately, being evidently referable to one or to the other, more probably to the present species, on account of its having been captured in the same locality and at the same time.

Type ♀ and type ♂, a couple of specimens from Karkloof, Natal, 1915 (H. W. Bell-Marley).

♀. Length of body, 10 mm.; of wing, 9 mm. Head and its appendages exactly as described in *A. monogramma*; the deep black median band of the frons is broader, the fore half being shining white; the yellow face is densely clothed with white dust. Thorax, pleurae, and scutellum exactly as in *A. monogramma*; there is the same blackish, white-dusted spot on the upper part of the mesopleura, continued above the notopleural line as a presutural spot. The abdomen differs in having, besides the abbreviated basal black stripe, lateral black spots on the second and third segment; moreover, the two last segments are broadly black at the sides; the venter is shining black, with only the last segment reddish. Legs as in the preceding, but with the tibiae much less infuscate, and with the praetarsi distinctly pale at base. Wings as in preceding species, but with less infuscated terminal half, and with no clear loop into the centre of the same cells.

♂. Length of body, 10·5 mm.; of wing, 9 mm. Occiput entirely white dusted, with a deep black stripe at upper eyes-border, and with vertical black stripe from vertex to neck; hairs dark above, longer and white below. Vertical triangle narrow, elongate, black, grey before the ocelli, with some black hairs. Frontal triangle as long as the middle distance between vertex and antennae, shining white, quite bare. Eyes from a lateral view rather narrow, viewed from the front broadly oval; they are in contact as long as one-third of the distance between antennae and vertex, and have the anterior middle areolets distinctly enlarged. Ground colour of face blackish, but it is densely white dusted, like the cheeks, which are much broader than in the female and likewise bare. Antennae, proboscis, and palpi as described in the female. Back of mesonotum reddish, rather shining, with long, erect, dark pubescence, and bristly hairs at sides ; the median black stripe is as in the female, not overlapping the dorsocentral lines and not edged with whitish stripes, or with less distinct ones in the presutural part ; the stripe is more linear, beginning, without being attenuated, just above the neck and ending, without being dilated, in front of the scutellum. The blackish, white-dusted presutural spot is as in the female. The pleurae are different in being completely blackish, white-dusted, only the propleura and the pteropleura being reddish ; mesophragma shining black in the middle, yellowish on the sides. Scutellum shining reddish, narrowly black at base, with long black hairs. Squamulae yellowish hyaline, with yellow, bare margin ; halteres yellowish. Abdomen shining yellowish on the three basal segments, more reddish on the last four ; first segment with black subquadrate spot in the middle ; second and third segment with blackish spot in middle and with a deep black stripe on each side ; fourth to seventh segment with a darker black middle spot and with deep black lateral stripes ; hairs rather long, whitish on the sides, dark in the middle ; venter yellowish, unspotted in the three basal segments, reddish with middle dark spots on the others. Genitalia shining black above, reddish below, with black hairs above and with yellowish ones below. All the coxae yellowish, with pale hairs. Four anterior femora yellowish, with whitish hairs ; hind femora broadly black towards the middle and there with dark hairs ; front and middle tibiae darkened on terminal half, those of the front pair more deeply so ; hind tibiae long, thick, almost entirely black and with black hairs ; all the tarsi black, those of the middle pair with paler base ; hind praetarsi thick and longer than the other joints taken together. Wings as described in the female, but less infuscate on the terminal half ; therefore the central band below the stigma is more distinct, chiefly at the bases of the discoidal and fourth posterior cells.

8. *Atrichops bivittata*, sp. nov.

Different from all the preceding species in the shape of the head, in the broader middle stripe of the back of the mesonotum, and in the absence of the dark presutural spot; it is, moreover, of distinctly smaller size.

Type ♀, a single specimen from Bulwer, Natal, September 1916 (Greene); one female from Marico, Transvaal, 1918, with more yellowish face (H. K. Munro); moreover, in the Museum of Budapest there is another female specimen from New Hannover, Natal, 1st February 1913.

♀. Length of body, 8·5 mm.; of wing, 8 mm. Occiput entirely deep black, only dark grey dusted below at the sides; the hairs of the upper part are dark yellowish brown, those of the lower part are longer and whitish. Frons distinctly broader and shorter than in the females of the preceding species; it is deep black on the basal two-thirds and brownish red, white dusted on the apical third; there are a few short black hairs in the middle. Eyes more rounded, with the vertical diameter about as long as the horizontal one. Face shiny black, with faint white dust; side cheeks bare, white dusted, twice as broad as in the females of the preceding species. Antennae, palpi, and proboscis as in the preceding. Mesonotum reddish yellow, but on the back it is black, opaque, the median stripe being much dilated and extending beyond the dorsocentral lines, which are marked with a narrow whitish stripe; moreover, the central part of this broad black stripe is white dusted before the suture; the hairs are blackish in the middle of the back, yellowish on the sides; there is no trace of the blackish presutural spot of the preceding species. The pleurae are blackish, opaque, only the pro- and pteropleura being yellowish; the dark parts are clothed with grey dust, but the white shining vertical median band is wanting; the sparse hairs are pale. Squamulae and halteres as in the preceding species. Abdomen reddish, rather shining; the 3–4 basal segments with a black triangular spot at base, the second and third segment, moreover, with black lateral stripes; hairs pale yellowish at the sides, dark on the back; venter entirely yellowish, unspotted, and with whitish hairs. Legs with yellowish coxae and femora; front tibiae and tarsi black; middle tibiae broadly yellowish and their praetarsi pale; hind tibiae yellowish at base, hind tarsi entirely black; front tarsi elongate, with tactile hairs below. Wings as described in the preceding species, but without terminal infuscation, even the median band being very faintly indicated below the stigma and at the base of the discoidal and fourth posterior cells.

9. *Atrichops binominata*, Bequaert.

Psyche, xxviii, 1921, p. 6 (*Atherix*)=*longipes*, Loew, Wien. Ent. Monatschr., vii, 1863, p. 12 (*Atherix*), nec Bellardi, 1861.

Distinct from all the preceding species on account of the entirely black thorax and of the different pattern of the abdomen; in the form of head and in the smaller size it is more nearly allied to *A. bivittata* than to any other.

Loew has described the male from Bloemfontein. I have seen one female in the Museum of Budapest from New Hannover, Natal, 8th February 1913.

♀. Length of body, 8 mm.; of wing, 7·5 mm. Head and its appendages as in the preceding; occiput with whitish patches above and at sides; the white dusted part of frons is one-third of the whole length; face black, with faint white dust; cheeks rather broad, but less than in *bivittata*; the second antennal joint blackish above, the first only infuscated. Mesonotum entirely black, only the humeri below, the notopleural suture, and a narrow stripe above the rest of the wings being reddish; middle part of back grey dusted before the suture, but there are no distinct whitish dorsocentral stripes; pleurae whitish or grey dusted, but without vertical white shining band; hairs dark. Scutellum shining reddish, with black base; hairs pale; halteres yellowish. Abdomen reddish; first and second segments with a black median spot, the second, moreover, with black lateral stripes; third, fourth, and fifth segments with broad black basal bands; seventh segment with deep-black sides; venter yellowish, unspotted; the hairs are dark on the black parts and pale on the reddish parts. Legs with yellowish coxae and femora; front and hind tibiae and all the tarsi black; middle tibiae dark yellowish; front tarsi with tactile hairs below. Wings as in the preceding species, distinctly but faintly infuscate on terminal half; the median dark band is less distinct.

Gen. ATHERIX, Meigen, 1803.

In determining the species of the present genus one must take into consideration the great difference between the sexes of the same species. The South African species are not unlike the European ones: the first resembles *A. ibis*; the second in the female likewise resembles *A. ibis*, while in the male it is more like *A. marginata*; the third resembles *A. marginata* in both sexes; the fourth is an aberrant form, which makes a passage to the following new genus. The third species is noteworthy by the widely separated eyes of the male; the second by the male being much darker than the female, precisely the contrary of what is to be seen in *A. ibis*, in which the female is darker than the male.

The species, which seem to be mostly mountain-dwellers, may be distinguished as follows:—

1. (6) Both branches of cubital fork of nearly equal length, ending symmetrically at wing-tip; discoidal cell sending three complete veinlets to hind margin of wing; pterostigma blackish; hind tibiae with well developed spurs; abdomen opaque.
2. (5) Wings with a rich design, consisting of fuscous and hyaline spots; abdomen with distinct yellow parts, at least on venter in the male; legs in part or entirely yellow; eyes of male very close.
3. (4) Wings brown, with three irregular bands of whitish hyaline spots; legs of male yellow; abdomen of male yellow, with basal black bands on all the segments . . . . *peringueyi*, sp. nov.
4. (3) Wings slightly infuscate, with a short darker median band surrounded by irregular hyaline spots; legs and abdomen of male in greatest part black; legs and abdomen of female in greatest part yellow. *barnardi*, sp. nov.
5. (2) Wings almost entirely hyaline, with a hardly distinct dark sub-stigmatical band, which is not surrounded by hyaline spots; abdomen in both sexes entirely black, even on venter; legs black; eyes of male as broadly distant as those of female . . . . *androgyna*, sp. nov.
6. (1) Upper branch of cubital fork shorter than the lower one and ending much before the wing-tip; lower veinlet from the discoidal cell reduced to a short stump; pterostigma very faintly infuscate; hind tibiae with small spur; abdomen shining . . . . . *incompleta*, sp. nov.

10. *Atherix peringueyi*, sp. nov.

An elegant species, the brightest coloured of all those here described, recalling the European *A. ibis*, but with different wing and abdominal pattern.

Type ♂, a single specimen from Stellenbosch, November 1887, collected by Dr. L. Peringuey, in whose honour this fine insect is named.

♂. Length of body, 12·5 mm.; of wing, 12 mm.; of wing-spread, 26 mm. Occiput densely clothed with opaque grey dust, with short darkish hairs above and with longer and abundant whitish ones below. Frons black, with opaque blackish-grey dust, and with long black erect hairs throughout the whole length; it is narrow, being about in the narrowest part as broad as the distance between the two basal ocelli, being a trifle broader at root of antennae. Eyes depressed, narrow in lateral view, but nearly circular in front view; they are bare, with equally small areolets. Antennae inserted very low and broadly separated at base; they are short and small, entirely black, with all the three joints of about the same length; the third joint is rounded, with a basal arista; basal joints with black, bristly hairs above. Face very short and broad, densely grey dusted, bare; side cheeks as broad as the antennae, grey, clothed with long darkish hairs. Palpi and proboscis black, with long black hairs; the latter is thick, about as long as the former or only a little longer. Back of mesonotum black, opaque, clothed with long, erect, dark pubescence; on the sides, above the notopleural line, there is a broad grey stripe, extending from the humeri to the sides of scutellum; if the disc is striped or not, it is impossible to say, owing to the bad preservation of the single type. Pleurae densely grey dusted, opaque, with paler pubescence. Scutellum black, grey dusted on the disc, a little shining, with long pale hairs. Squamulae whitish, with yellow border which is pale haired; halteres with yellowish stalk and blackish knob. Abdomen conical, broad at base; first segment deep black, with reddish sides and a broad grey hind border; second, third, and fourth and fifth segments reddish yellow, with a broad deep-black basal band, which has in the middle a black prolongation reaching nearly to the hind border, which is grey dusted; the two last segments are reddish, with a black middle spot; genitalia reddish; hairs pale on reddish parts, black on dark parts; venter entirely yellowish grey, with a whitish hind border to the sternites and with rather long erect white hairs. Legs entirely yellowish, with infuscated last tarsal joints; coxae black, grey dusted; hairs long and pale; front tarsi elongated, longer than their tibiae, with no distinct tactile hairs. Wings with the same venation as in *A. ibis*, but with the cubital fork longer, its base being about above the middle of the discoidal cell. The wings are entirely brown, and there is no trace of the yellowish spot of *A. ibis* at the end of submarginal cell, just beyond the stigmatical spot; the three oblique bands of whitish hyaline spots are as follows: the first goes from the base of the marginal cell across the ends of second basal and anal cells to the base of the axillary lobe, diluted at ending; the second goes from the middle of the first submarginal cell across the base of the second submarginal, base of first posterior, middle of discoidal, and base of fourth posterior cell, to the middle of the fifth posterior cell; the third is the shortest of all and consists of four spots, two before the end of second submarginal and first posterior cells and two in the middle of the third and fourth posterior cells, one in anal cell.

11. *Atherix barnardi*, sp. nov.

Distinct from the preceding by the much blacker male, and in both sexes by the much more reduced wing-pattern; the male recalls the European *A. marginata*, while the female is very different.

Type ♂, type ♀, and some additional specimens from Oudebosch, Caledon Div., 1500 ft., January 1919; another male from Zonder Ende Peak, 3600 ft., Cape, January 1919, all collected by K. H. Barnard, in whose honour the species is named.

Owing to the great differences, the sexes are described separately.

♂. Length of body, 7 mm.; of wing, 5·5 mm.; the specimen from Zonder Ende Peak measures 8 mm. in body and 6·5 in wing. The appendages and vestiture of the head are as described in the preceding species; but the eyes are distinctly more approximate, their distance at the narrowest point being equal to one ocellus; the frons is deep black, with a grey middle stripe between the antennae, prolonged on the middle of the frontal triangle. Thorax entirely opaque black, with dark pubescence; on the back are two equal, complete, narrow, whitish stripes along the dorsocentral lines; pleurae grey dusted, with sparse whitish hairs. Scutellum black, rather shining, with a broad red hind border, which is less distinct on the Zonder Ende Peak specimen; hairs erect, pale. Squamulae and halteres as in preceding. Abdomen narrower at base, cylindro-conical; clothed with long, erect, pale hairs. First segment grey, with black base; second, third, fourth, and fifth segments black, with a narrow, yellowish, grey-dusted hind border; sixth and seventh segments likewise, but less distinctly so; genitalia black. Venter black, with broad yellowish hind borders of all the segments; hairs whitish. Legs black, with the four anterior femora and tibiae more or less distinctly yellowish, while the hind femora are yellowish at both ends; front tarsi elongate, with more distinct tactile hairs. Wings with nervation and pattern about the same as in *A. marginata* (Verrall, British Flies, 1909, fig. 192, p. 290), but even in this case the cubital fork is longer.

♀ Length of body, 5·5–6·5 mm.; of wing, 5–5·5 mm. Head and its appendages as described in the male; the eyes are smaller, their vertical diameter being longer than the horizontal one; the frons is broad, about one-fourth of the head, with parallel sides, clothed on its whole length with long, erect, black hairs; it is of a deep black colour, with a broad grey stripe along the middle; ocellar spot black; vertex grey. Back of mesonotum blackish grey, with two broad whitish stripes united together in front of the scutellum; humeri yellowish; a broad grey stripe above the notopleural suture. Pleurae yellowish, whitish dusted, more or less broadly blackish above and below. Scutellum reddish, with a narrow black base. Halteres yellowish, with the knob black at end. Abdomen broad, parallel-sided, flat, obtuse at end, with scattered and soft whitish hairs; it is entirely reddish yellow, even on venter; first segment with a small black central spot; second, third, fourth, and fifth segments with a broad, equal, black, basal band, which does not reach the sides, these, however, with a narrow black stripe on their deflexed borders; sixth and seventh segments with a much less distinct pattern; moreover, the segments from the second to the fifth have each a broad, white shining hind border. Legs with yellow coxae and femora, front and hind tibiae black, middle tibiae yellowish; all the tarsi black, those of the front pair with long tactile hairs below. Wings as in the male, with well-developed pattern.

12. *Atherix androgyna*, sp. nov.

Allied to the preceding, but with less patterned wings, broadly separated eyes in the male, and female much darker.

Type ♂, a single specimen from Gt. Winterhoek, Tulbagh, 4500 ft., November 1916 (R. M. Lightfoot); type ♀, and some additional specimens of same sex from French Hoek, 2500–3600 ft., December 1916 (K. H. Barnard).

♂. Length of body, 6 mm.; of wing, 5·5 mm. Head and its appendages as described for the male of the preceding species, but the eyes are about as widely separated as in the female of the preceding species; the parallel-sided frons is as broad as one-quarter of head, opaque black, with a narrow greyish median stripe on the anterior half, visible only in some lights. Thorax, pleurae, and scutellum entirely black; but the type being in bad condition it is impossible to see if there is a pattern or not. Halteres black, with yellowish stalk. Abdomen shaped as in the male of the preceding species, entirely black, even on venter; second, third, fourth, and fifth segments each with a rather broad whitish hind border; genitalia entirely black and black haired; they are apparently shaped as in the preceding species; hairs of back and venter short and scarce, mostly black, pale only at sides near the base. Coxae and legs entirely black, even those of the middle pair; anterior tarsi without distinct tactile hairs below; hind tibiae with short spurs, only the internal one being rather developed. Wing-nervation as in the preceding species. The wing-pattern is very reduced, consisting only of a black, elongate stigmatical spot, and below this of an uncertain dark median band extended to the base of the discoidal and fourth posterior cell; there is also an elongate dark spot in the middle of the first basal cell; but the usual whitish hyaline patches of the preceding species are not distinguished, and therefore the middle dark band is less striking.

♀. Length of body, 5·5–6 mm.; of wing, 5–5·5 mm. Head and its appendages as in the male, but the frons distinctly broader, being as broad as the third of head, and thus distinctly broader than in the female of *A. barnardi*; it is black, grey dusted, with a distinct longitudinal median furrow, which is not present in the male. Thorax black, with reddish-brown humeri and grey-dusted pleurae; on the back there are two less distinct, narrow, distant, greyish stripes; the sparse pubescence is blackish on the back, whitish on the pleurae; scutellum and halteres as in the male. Abdomen shaped as in the female of *A. barnardi*, entirely opaque black, even on venter; all the segments have a greyish hind border, which is broader on the intermediate segments and is present even on venter; the hairs are very short and scarce, even at the sides, where they are pale. Legs entirely black, brownish in immature specimens; front tarsi with a few tactile hairs below; hind tibiae with small spurs, like those of the male. Wings as described for the male, but with even a fainter pattern, being sometimes hyaline with a dark stigmatical spot and with a less distinct trace of the middle band.

13. *Atherix incompleta*, sp. nov.

Very different from all the other species here described on account of its shining abdomen, of its very peculiar wing-venation, and of the very minute spurs of the hind tibiae.

Type ♀, a single badly preserved specimen from Paarl, Cape, October 1919 (Rev. G. Hawke).

The position of this strange insect is doubtful. It cannot be placed in *Symphoromyia*, notwithstanding the indistinct spurs of hind tibiae, owing to the closed anal cell. The possibility is not excluded that it may be the female of a species of the new genus following, or even the unknown female of the type-species itself; but I refrain to accept this last opinion on account of the very different form of the cubital fork, which is different from that of all the other species here described.

♀. Length of body, 5 mm.; of wing, 5·5 mm. Head and its appendages as in the preceding female; the frons is of the same width, as broad as one-third of head, has a longitudinal middle furrow, and is opaque black, and seemingly pale dusted; the palpi are shorter and more obtuse than in the preceding. Thorax distinctly broader than in all the preceding species, being rather subquadrate; it is entirely dull black on the back, with reddish-brown humeral and postalar calli, and apparently without any pattern; the pubescence is long, soft, dense, erect, dark in colour, and almost bristly on the notopleural depression before the suture; the pleurae are dark grey dusted and clothed with long whitish hairs on meso- and hypo-pleura. Scutellum broader than long, black, rather shiny, clothed with hairs like those of back. Halteres black, with yellowish stalk. Abdomen broader than in all the preceding females, being as broad as the thorax; it is shiny black, with a narrow, reddish-brown hind border to the segments, but without any other distinct pattern; the hairs are long and soft, pale yellowish, chiefly at sides; venter entirely black. Legs short and thicker than in all the preceding species; they are partly broken off in the case of the type, but the coxae are black, the hind and middle femora are black, with dark reddish base; hind tibiae and hind tarsi black, the former with hardly visible spurs. Wings distinctly longer and broader than in all the preceding species; they are greyish hyaline and practically unspotted, even the stigmatical spot being faintly indicated. The venation is very peculiar, chiefly on account of the cubital fork, which has the upper branch short and ending before the wing-tip, while the lower branch is longer and ends precisely at the wing-tip (in the other species both the branches are equal in length and end symmetrically at both sides of wing-tip). The discoidal cell is acute outwardly, both its superior veinlets issuing practically from the same point and the third inferior veinlet being reduced to a very short stump; there are therefore only four posterior cells, the second of which is of triangular shape. Anal cell regularly closed and provided with a short stalk.

PACHYBATES, gen. nov.

The present new genus shows all the characters of *Atherix* s. str., with the following differences: 1. The body is shorter, broader, and more densely hairy; 2. the wings are long and broad, longer than the body, and quite unspotted; 3. the eyes of the male are widely separated; 4. the abdomen of the male is short, with only five visible segments; 5. the genitalia of the male are of greater size and very differently shaped, being, moreover, pendulous instead of erect; 6. the legs are very thickened, all the femora and the hind coxae being greatly swollen in the male, in which the praetarsi of the hind pair bears moreover a strong terminal, spur-like expansion; 7. the spurs of hind tibiae are very small. Some of these characters are strictly sexual, but the general appearance of the fly is very peculiar. The wing-venation is exactly as in *Atherix*, the cubital fork being equally branched, both branches ending symmetrically with the wing-tip.

Type, *Atherix braunsi*, Bequaert, 1921.

14. *Pachybates braunsi*, Bequaert.

Psyche, xxviii, 1921, p. 1, fig. (*Atherix.*)

A very characteristic fly, looking not unlike some species of *Scatophaga* or of *Brachyopa*, with orange and softly haired abdomen, and with whitish halteres.

I have seen a male specimen of the typical series, caught at Stellenbosch (1st November 1915) by Dr. H. Brauns, and sent me by this collector. I have nothing to add to the excellent and long description of Dr. J. Bequaert. All the coxae are distinctly swollen, chiefly those of the hind pair; the spurs of the hind tibiae are much smaller than in all the other species, excepting *A. incompleta*.

The female is not yet described, but is recorded by Dr. Brauns as a much darker insect, agreeing in this with the above described *A. incompleta*.

Gen. ATHERIMORPHA, White.

Proc. R. Soc. of Tasmania, 1914, p. 41.

I place here provisionally in this Australian genus an interesting fly which agrees with it in the main characters, but shows some peculiarities. The possibility is not excluded that this fly may be a blood-sucking one, like some species of *Symphoromyia* or of *Spaniopsis*, which have, however, the hind tibiae with only one spur or without any distinct spurs at all. The generic characters of the South African species are as follows: Eyes widely separated in both the sexes, not bisected. Face broad and short, flat, not socketed. Antennae inserted very low, with the third joint gradually drawn out into a terminal, long, and thick style, which is longer in the male than in the female. Proboscis rather projecting, strong, as long as the palpi. Back of mesonotum and scutellum beset with long, erect, bristle-like hairs which at sides before the sutures are almost like true bristles; pleurae nearly bare, with a few thin hairs on metapleura. Abdomen long, narrowly cylindrical, thiny pilose. Legs with rather thickened femora in the male; tibiae beset with distinct spicules, the anterior ones without spurs, while those of the two last pairs have two very robust ones; front tarsi devoid of tactile hairs below. Wings broad, with rounded alula; second vein long, longer than the elongated cubital fork; discoidal cell short, equal to the second and third posterior cells, with three complete veinlets issuing from its external border; five posterior cells, all broadly open outwardly, the fifth being at base not in contact with the discoidal cell; anal cell closed at wing-border, or narrowly open.

15. *Atherimorpha albipennis*, sp. nov.

A black, densely grey-dusted fly, with conspicuously white-haired abdomen and white wings.

Type ♂ and ♀, a single couple of specimens from Hottentots Holland Mts., 4000 ft., Caledon, Cape, 1916 (K. H. Barnard). I am not sure about the sexes, but I have considered as the male the specimen with longer antennae and with closed anal cell.

♂ ♀. Length of body and wings, 5–6·5 mm. Head entirely black; occiput densely covered with light grey dust, deeply concave in the middle and beset at sides with long, black, bristle-like hairs disposed in two to three irregular rows; near the eyes and below there are white hairs. Frons of about the same breadth in both sexes, only a little longer than broad; it is clothed with dense, dark grey dust and with scattered, erect, bristly, black hairs; ocellar tubercle of great size, rounded, prominent, with erect black hairs; above each antenna there is a prominent transverse keel. Face bare, grey dusted in the middle, whitish on the sides and on the broad but not prominent peristomialia. Head in front view much broader than high; eyes rounded, bare, with equally small areolets. Antennae inserted below the middle of the eyes, entirely black; the two basal joints are globular, with some black hairs above; third joint pyriform, about as long as the two first joints taken together, and with a thick style, which in the male is distinctly longer than the whole antenna, while in the female it is shorter than the antenna. Palpi and proboscis black, clothed with mostly black hairs, with several whitish ones intermingled. Thorax black, densely clothed with light grey dust ; on the back there are three dark stripes, that of the middle narrower than the others ; the pleurae are lighter grey dusted, with several, irregular, darker spots. The hairs of the back are long, erect, black, bristle-like ; they are disposed in one row, both the acrostical and the dorsocentral and the lighter lines between them being quite bare ; beyond the dorsocentral lines the sides of the back are clothed with bristly hairs, with several true bristles above the notopleural line, before the suture ; the pleurae are bare, with only a few thin hairs on the metapleura. Scutellum like the back of mesonotum, with erect, bristly hairs at hind border. Squamulae white and white-fringed ; halteres very long, whitish, with a partly darkened knob. Abdomen elongate, cylindro-conical, with seven visible segments in the male and eight in the female ; it is black, densely clothed with a light grey dust above and with a darker grey dust on venter ; it is equally clothed with thin, dense, white hairs. Male genitalia small, with a grey lamella below and with reddish appendages above. Legs with black, grey-dusted coxae, dark reddish femora and tibiae, and the tarsi darkened towards the end ; all the femora are distinctly thickened in the male ; the tibiae have distinct dark spicules, disposed in three regular rows ; the femora have very sparse shiny pale hairs ; the last joints of the front tarsi are rather thick ; the pulvilli and the broad, pad-like empodium are dirty yellowish. Wings very broad, rounded outwardly, entirely whitish, with black costa and dark veins which are yellowish at base ; stigmatical spot elongate, not much infuscate, occupying the middle of the marginal cell, between the end of the praefurca and the end of the first longitudinal vein. Second vein long, a little wavy ; cubital fork long and narrow, longer than its stalk ; small cross-vein near the base of the short and small discoidal cell ; second posterior cell broad at base ; ambient vein complete ; axillary lobe rounded like the alula, the former being three times as long as the latter.

SUBFAMILY CHRYSOPILINAE.

Gen. CHRYSOPILUS, Macquart, 1826.

Dr. Speiser has given in 1914 (Deutsch. Entom. Zeitschr., p. 5) a key to the three known Ethiopian species of the present genus. From South Africa I have seen the following two :—

1. (2) Back of mesonotum yellowish ; pterostigma rounded ; second posterior cell with a long and acute base . . . . *testaceus*, Loew.
2. (1) Back of mesonotum blackish ; pterostigma elongate ; base of second posterior cell short . . . . *tuckeri*, sp. nov.

16. *Chrysopilus testaceus*, Loew, 1858.

Distinct by its much lighter coloration, and by the peculiar wings.

Originally described from Caffraria, but never found subsequently. I have seen specimens of both sexes from Barberton, Transvaal, April (H. K. Munro).

To the original description may be added: pterostigma rounded, being only a little longer than broad; it is sharply marked, ending before the end of the marginal cell, which has therefore a hyaline spot at end, and beginning abruptly inwardly. The second posterior cell is very acute at base, its inner point being only a little shorter than the length of the terminal cross-vein of the discoidal cell.

17. *Chrysopilus tuckeri*, sp. nov.

Closely allied to the preceding and perhaps only a dark form of it, but distinct by its greater size and by the different wings.

Type ♂, and an additional specimen of the same sex from Humansdorp, Coldstream, February 1921 (R. Tucker); named in honour of the collector.

♂. Length of body, 8 mm.; of wing, 7·5 mm. Eyes as in the preceding species, sharply bisected, and in contact in a line which is not longer than the prominent ocellar tubercle. Occiput entirely black, dark grey dusted, like the narrow and elongate frontal triangle; ocellar tubercle black and bare. Side cheeks black, grey dusted, bare; facial socket dark yellowish. Antennae with the two basal joints yellowish, the third and the arista blackish. Palpi yellowish, with white hairs; proboscis yellow, with pale yellowish flaps. The hairs of the lower part of head are whitish. Back of mesonotum blackish, with yellowish humeral and postalar calli; and with yellowish notopleural line; it seems that there is no trace of the golden tomentum found in the preceding species; pleurae yellowish grey, with darker parts; there are no hairs; scutellum yellowish, denuded in the specimens before me. Squamulae hyaline, with darker border; halteres pale yellowish, with darkened knob. Abdomen blackish, with yellowish basal segment and with a yellowish band at the hind border of the segments from the second to the fifth; last segments and genitalia quite black. All the hairs whitish; venter entirely yellowish. Coxae and legs pale yellowish, the tarsi darkened at end. Wings iridescent, hyaline, with a faint darkish tint; stigmatical spot brown, elongate, filling up the whole end of the marginal cell, which lacks the conspicuous hyaline terminal spot of the preceding; moreover, there is inwardly a yellowish shade extending to the middle of the marginal cell. Veins blackish. Venation as in the preceding, with the difference that the acute base of the second posterior cell is shorter, being shorter than one-half of the terminal cross-vein of the discoidal cell; this last cell is therefore narrower and more regularly rectangular than in the preceding species; the basal cross-vein of the second posterior cell is less than one-half the length of the terminal cross-vein of the discoidal cell, while in *C. testaceus* these two cross-veins are of about the same length.

SUBFAMILY ARTHROTELINAE, nov.

This new subfamily is very like the Nearctic *Arthroceratinae,* showing also an antennal flagellum consisting of eight distinct joints, and the front tibiae without spurs, but it is distinguished by the elongate proboscis, a very rare character among the *Rhagionidae.* The bisected eyes of the male are as in the *Chrysopilinae,* from which the new subfamily is distinguished also by having two spurs on the hind tibiae.

ARTHROTELES, gen. nov.

This new genus is very like a *Symphoromyia* or a *Chrysopilus* in general appearance, but is at once distinguished by the annulated flagellum of the antennae. The form of the face is as in the North American genus *Arthroceras,* Williston, or in the related genus *Misgomyia,* Coquillett, 1908, but the long proboscis is very peculiar. In the Australian genus *Atherimorpha,* White, according to Mr. Hardy (Pap. and Proc. Roy. Soc. of Tasmania, 1919, p. 120, pl. xxvii, fig. 2), the antennal style shows some annulations at the base; but this is not the case with the South African species *A. albipennis,* which I have described above.

Head in front view broader than high, with the occiput concave in the middle and rather prominent at the sides. Ocellar tubercle prominent, with three ocelli of rather large size. Eyes bare, in the male meeting in a long line, bisected, the smaller areolets being limited to the lower third. Frontal triangle very small, much smaller than the ocellar tubercle and rather depressed. Face transverse, much broader than high; it is divided into three parts by two deep, diverging furrows running from the base of antennae to the oral margin; the middle part is socketed and bare; the side cheeks are also bare, but have very long hairs below. The antennae are inserted below the middle of the eyes and are longer than the antero-posterior diameter of head, being carried horizontally; they resemble very much those of *Arthroceras* (see Williston, Man. N.A. Dipt., third edit., p. 161, fig. 19); the two basal joints are of about the same length, the second, however, being more swollen and globular, and both are clothed with rather long hairs; the third joint is smaller but longer than the second, and bears a seven-annulated style, thus resulting in a flagellum of eight quite distinct joints, which, as a whole, is about four times longer than the two basal joints together; the last segment of the flagellum is longer than any other and is about as long as the first (or true third antennal joint). Proboscis slender and acute, directed obliquely forwards, as long as head and thorax together: palpi long and very hairy, with the last joint greatly swollen and curved; they are about as long as the antennae, and much shorter than the proboscis. Thorax rounded, with the back of the mesonotum convex, clothed with long hairs, but without bristles or bristly hairs; pleurae almost bare. Scutellum with long hairs, but without bristly ones. Abdomen conical, with seven visible segments, the first and the second terminal segments being much shorter than each of the others; male genitalia erect. Legs normal; tibiae with three rows of less-developed spicules; front tibiae without spurs; middle and hind tibiae each with two strong spurs; empodium pulvilliform, as broad as the pulvilli. Wings with about the same venation as in *Arthroceras* (see Williston, Manual, p. 161, fig. 18). There are five posterior cells, all broadly open, the first, second, third, and fourth of about the same breadth at end, the fifth much broader, being about as broad as the third and the fourth together. Cubital fork narrow and long, longer than its own stalk; its lower branch ends below the wing-tip. Small cross-vein placed very near the base of the discoidal cell, which is parallel-sided, acute at base, and obtuse at end; anal cell closed at wing-border; axillary lobe broad, of nearly triangular shape; alula rounded and fringed with long hairs, like the axillary lobe.

Type, the following new species.

18. *Arthroteles bombyliiformis*, sp. nov.

An elongate, dark fly, looking very much like some species of *Bombyliidae*, but at once distinguished by the annulated flagellum of antennae, by the three broad, pad-like pulvilli, and by the five posterior cells of wings.

Type ♂, and an additional specimen of the same sex from the Cedarbergen, Clanwilliam Div., 4000–5000 ft., September 1923 (K. H. Barnard).

♂. Length of body, 5·5–6 mm.; of wing, 4·8–5 mm.; of proboscis, about 2 mm. Head entirely black, with dark grey dust on the occiput and with lighter grey dust on the face. The hairs of the occipital fringe and those of the ocellar tubercle are long and black; the hairs of the underside of head are very long, dense, soft, and white. Antennae quite black, with black hairs on the basal joints. Palpi and proboscis black, the former with long black hairs, which are particularly long and dense on the swollen terminal joint, forming dense tufts inferiorly. Thorax opaque black, clothed with dark grey dust; in the middle of back there are three black stripes, the middle one distinctly narrower, and all ending before reaching the scutellum; the hairs of the back are very long and black, like those of scutellum; pleurae with a few scattered black hairs, and with a fan-like row of white hairs on metapleura. Halteres black, with pale yellowish stalk; squamulae whitish, with whitish hairs. Scutellum and mesophragma black, dark grey dusted. Abdomen entirely opaque black, with dark grey dust which is lighter on venter and along the hind border of the middle segments; it is clothed with rather long white hairs; genitalia black, pale hairy. Legs entirely black, opaque; coxae and femora with long whitish hairs; spurs and spicules blackish; the three pulvilli whitish. Wings greyish hyaline, a little darker along the fore border towards the base; stigmatical spot narrow and long, brownish, extending from the base of the praefurca to the end of the submarginal cell. Veins black and rather thick, only the extreme base a little yellowish.

Systematic Arrangement of the Genera and Species.

VERMILEONINAE.

- *Lampromyia*, Macq.
  - sericea, Westw.
  - appendiculata, Bez.
  - argentata, Big.
  - brevirostris, Bez.

RHAGIONINAE.

- *Atrichops*, Verr.
  - monogramma, Bez.
  - ,, var. agramma, Bez.
  - inaequalis, Bez.
  - bivittata, Bez.
  - binominata, Beq.
- *Atherix*, Meig.
  - peringueyi, Bez.
  - barnardi, Bez.
  - androgyna, Bez.
  - incompleta, Bez.
- *Pachybates*, Bez.
  - braunsi, Beq.
- *Atherimorpha*, White.
  - albipennis, Bez.

CHRYSOPILINAE.

- *Chrysopilus*, Macq.
  - testaceus, Loew.
  - tuckeri, Bez.

ARTHROTELINAE.

- *Arthroteles*, Bez.
  - bombyliiformis, Bez.

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4. *New South African Micro-Lepidoptera.*

By E. Meyrick, B.A., F.R.S.

As in my preceding papers of this series, the material studied was received through the kindness of the Director of the South African Museum, in which the types are preserved.

PTEROPHORIDAE.

Gen. Trichoptilus Wals.

Trichoptilus negotiosus, n. sp.

♂ 17 mm. Head ochreous-fuscous. Palpi white, a strong black lateral line. Thorax greyish-ochreous; shoulders narrowly fuscous, some white suffusion posteriorly. Abdomen greyish-ochreous, longitudinally streaked white and black. Forewings brownish-ochreous suffusedly speckled grey, some whitish sprinkling in disc towards base; costal edge dark fuscous from base to $\frac{2}{3}$, a black dot beneath costa near base, a larger blackish dot towards dorsum at $\frac{1}{5}$, one in disc at $\frac{1}{3}$, and a smaller one on base of cleft; an indistinct bar of white irroration on both segments at $\frac{1}{3}$ of length, and one more distinct and on first segment well defined at $\frac{2}{3}$; between these a costal patch of dark fuscous suffusion, a suffused white dash towards apex of both segments, strongest on first; cilia grey, on costa white bars at $\frac{1}{3}$ and $\frac{2}{3}$ of first segment and blackish basal suffusion between these, a white spot before apex, on lower margin of first segment one or two slender whitish bars towards apex, two or three black scales between these, a few scattered whitish and blackish scales anteriorly, on upper margin of second segment scattered black hair-scales from $\frac{1}{3}$ to near apex, and some white scales near base, at apex a blackish bar between two whitish, on dorsum a white tornal bar preceded by a small blackish scale-tooth, and slighter white bars at $\frac{1}{4}$ and $\frac{2}{5}$ of segment, latter followed by some black scales. Hindwings dark grey; cilia grey, third segment wholly without scale-tooth.

Cape Province.—Witte R., Wellington, 1500 feet, in November (K. H. Barnard); one specimen.

TORTRICIDAE.

Gen. Cnephasia Curt.

Cnephasia chlorocrossa, n. sp.

♀ 13 mm. Head and thorax dark grey speckled whitish. Palpi 4, ochreous-yellowish, irrorated dark fuscous towards upper and lower edges, base and tip whitish. Abdomen grey. Forewings rather dilated posteriorly, costa gently arched, apex obtuse, termen faintly sinuate, oblique; grey, markings blackish-grey irregularly mixed with ferruginous; small whitish-ochreous spots in middle of base and on dorsum near base; edge of basal patch well defined, nearly vertical, obtusely angulated above middle; space beyond this somewhat mixed and suffused with whitish-ochreous, especially towards costa, with a small dark costal spot; central fascia moderate, little oblique, irregular-edged, with strong posterior triangular projection above middle; four spots on costa posteriorly separated by whitish-ochreous suffusion, last three connected with an irregular blotch resting on middle of termen; an erect streak from tornus reaching half across wing: cilia ochreous-whitish, above apex and below tornus grey, a grey postmedian shade more or less partially expressed. Hindwings dark grey; cilia grey.

Cape Province.—Montagu and Oudebosch, October, December (K. H. Barnard); three specimens.

Cnephasia catastrepta, n. sp.

♂ 15 mm. Head, palpi, and thorax white irrorated grey, palpi $1\frac{1}{2}$. Antennal ciliations 1. Forewings somewhat dilated, costa slightly arched, apex obtuse, termen slightly rounded, oblique; whitish irregularly irrorated grey forming an obscure strigulation; a few scattered black scales in disc; a blotch of grey suffusion on base of costa; moderate subquadrate spots of grey suffusion on costa at $\frac{1}{3}$ and dorsum before middle; central fascia represented by a blotch of grey suffusion on middle of costa and one on dorsum rather beyond it, latter edged anteriorly by a vertical line of black scales, costal patch forming a suffused grey spot at $\frac{3}{4}$; an irregular spot of grey suffusion towards termen above middle, edged with a few black scales; cilia whitish sprinkled with grey. Hindwings light grey; cilia whitish.

Cape Province.—Capetown (Penfold); one specimen.

EUCOSMIDAE.

ACHARNEODES, n. g.

Palpi moderate, subascending; second joint expanded with dense scales towards apex; terminal joint minute. Thorax without crest. Forewings in ♂ with or without costal fold; 3–5 not approximated towards termen, 7 separate, to termen. Hindwings in ♂ with more or less developed subdorsal hair-pencil in groove or dorsal fold; 3 and 4 connate, 5 closely approximated at base, 6 and 7 closely approximated towards base.

Type *helota* Meyr. from India and Ceylon. Referable here also are *querula* Meyr. from South Africa, and several Indian species.

Acharneodes atrinodis, n. sp.

♂ 19–25 mm. Head, palpi, and thorax brown. Forewings elongate, dilated, costa gently arched, without fold, apex obtuse, termen slightly rounded, somewhat oblique; brown, posteriorly suffusedly mottled with grey; costa dark fuscous with pairs of whitish strigulae, sometimes a few scattered blackish dots or strigulae; a more or less developed inverted-triangular blackish blotch beneath middle of disc; an obscure pale or whitish dot on end of cell, edged anteriorly by a more or less developed blackish spot; cilia brownish, sometimes obscurely barred grey, with a grey sub-basal line. Hindwings rather dark grey; cilia grey, a darker sub-basal line.

CAPE PROVINCE.—Capetown (Penfold); two specimens.

Gen. LASPEYRESIA Hübn.

Laspeyresia ichthyura, n. sp.

♂ ♀ 12–14 mm. Head ochreous-whitish or whitish-grey-ochreous. Palpi whitish. Thorax dark grey irrorated whitish. Abdomen in ♂ with valvae very broadly rounded; externally to these a similarly rounded but shorter flat dense dark fuscous scale-tuft. Forewings with termen slightly sinuate, little oblique; dark grey densely irrorated whitish, tinged ochreous towards apex, more suffused whitish in disc; costa with paired strigulae of whitish irroration separated by dark fuscous marks, from these at middle and ⅔ very oblique leaden strigae to above ocellus; ocellus margined laterally with leaden-metallic streaks, enclosing three short black marks touching posterior one; cilia dark grey irrorated whitish. Hindwings grey; cilia light grey, a darker sub-basal shade.

S.W. Africa.—Otjimbombe, Kunene R., and Namutoni, in February and March (K. H. Barnard); three specimens. Very similar to *modica*, but ♂ easily recognised by the peculiar genitalia.

GELECHIADAE.

Gen. Pycnostola Meyr.

Pycnostola pachyacma, n. sp.

♀ 20 mm. Head whitish, centre of crown greyish. Palpi white, irrorated dark fuscous except apex of joints; tuft of second joint short, terminal joint shorter than second, much thickened with scales to apex, hardly pointed. Thorax white irrorated dark grey. Abdomen whitish. Forewings narrow-lanceolate, apex considerably produced, acute; white, irregularly irrorated dark grey; a ferruginous-ochreous spot at base of dorsum; an oblique bar of dark grey suffusion from base of costa to fold, spotted with ferruginous-ochreous on extremities; an oval spot of dark grey irroration suffused with ferruginous-ochreous towards costa at $\frac{1}{3}$; stigmata forming dark grey spots suffused with larger ferruginous-ochreous spots, plical obliquely before first discal; dorsal edge shortly ferruginous-ochreous before tornus; a streak of ferruginous-ochreous suffusion along lower $\frac{2}{3}$ of termen; cilia ochreous-whitish, with two faint greyish shades. Hindwings grey-whitish; cilia ochreous-whitish.

Cape Province.—Montagu, October (K. H. Barnard); one specimen. The thickened terminal joint of palpi is quite peculiar, but in all other respects the species is quite normal in structure and appearance, and does not need generic separation.

Gen. Aristotelia Hübn.

Aristotelia dryonota, n. sp.

♂ 14 mm. Head and thorax dark fuscous sprinkled whitish. Palpi blackish; second and terminal joints each with two rings of whitish irroration. Forewings with apex pointed, termen extremely oblique, 6 separate; grey irrorated blackish, irregularly mixed blue-leaden; an irregular brownish-ochreous dorsal stripe from base to apex, occupying about $\frac{1}{3}$ of wing, posteriorly somewhat interrupted; discal stigmata rather large, black, edged laterally with a few white scales, first preceded by a slender indistinct ochreous dash; plical less marked, resting on edge of dorsal stripe very obliquely before first discal; cilia grey-whitish, with interrupted irregular black sub-basal and three grey lines, a short white mark from base beneath apex, on costa rather dark grey. Hindwings slaty-grey; cilia pale greyish, on basal half tinged whitish-yellowish.

Cape Province.—Zuur Vlakte, Wellington, 3000 feet, November (K. H. Barnard); one specimen.

Gen. Telphusa Chamb.

Telphusa ochlerodes, n. sp.

♀ 15 mm. Head ochreous-whitish, crown irrorated dark grey except on sides. Palpi ochreous-whitish, reddish-tinged, second and terminal joints each with two bands of blackish-grey suffusion. Thorax rosy-whitish irrorated grey, shoulders and two dorsal angulated bars blackish-grey. Forewings rather narrow, apex pointed, termen very obliquely rounded; grey, tips of scales whitish, with a faint rosy tinge, more marked posteriorly; small blackish spots on base of costa and dorsum; an oblique irregular blackish streak from costa at $\frac{1}{6}$ to below fold; stigmata black, moderate, plical elongate, hardly before first discal, a small spot obliquely above and before first discal and one on costa above this, second discal forming an irregular transverse mark; a blackish spot on costa above this and dark grey suffused spot connecting it with dorsum; some scattered blackish irroration in disc towards apex; indistinct dark grey marginal dots towards apex; cilia grey. Hindwings grey, in disc thinly scaled and subhyaline with bluish tinge; cilia light grey.

S.W. Africa.—Nuragas, January (R. W. Tucker); one specimen.

Gen. Gelechia Hübn.

Gelechia eusebasta, n. sp.

♂ 21 mm. Head light greyish-ochreous. Palpi greyish-ochreous, anterior edge ochreous-whitish. Thorax light ochreous, faintly pinkish-tinged. Forewings elongate, costa slightly arched, apex pointed, termen faintly sinuate, very oblique; rose-pink; extreme costal edge from near base to $\frac{2}{3}$ and all veins suffusedly streaked with light yellow-ochreous; discal stigmata small, brownish; cilia whitish-ochreous, mixed or faintly barred with light rose-pink on basal half. Hindwings pale whitish-grey; cilia whitish-grey-ochreous.

Cape Province.—Kalk Bay, January (Robertson); one specimen.

Gelechia dryadopis, n. sp.

♂ 17 mm. Head, palpi, and thorax light brownish-ochreous, palpi with a few dark fuscous specks. Forewings rather narrow, costa slightly arched, apex pointed, termen very obliquely rounded ; light brownish-ochreous sprinkled with rather dark fuscous ; base of costa suffusedly irrorated dark fuscous ; stigmata blackish, plical rather obliquely before first discal, a small blackish dot between first and second discal, some irregular fuscous suffusion between stigmata ; an undefined spot of fuscous suffusion on costa at $\frac{2}{3}$; a marginal series of small irregular dark fuscous dots on posterior part of costa and termen ; cilia pale ochreous, somewhat sprinkled dark fuscous towards base. Hindwings pale grey ; cilia pale ochreous.

Cape Province.—Rondebosch (Penfold) ; one specimen.

Gelechia omphalopis, n. sp.

♀ 21 mm. Head pale ochreous. Palpi whitish-ochreous irrorated dark fuscous. Thorax dark purplish-fuscous, posterior extremity pale ochreous. Abdomen fuscous. Forewings rather narrow, costa slightly arched, apex obtuse, termen rounded, rather strongly oblique ; dark purplish-fuscous ; markings whitish-ochreous ; three small spots in a transverse series near base, lowest touching a short slender pale ochreous streak on dorsal edge ; a transverse blotch in middle of disc not reaching either margin ; a small spot on costa at $\frac{4}{5}$; cilia fuscous with darker sub-basal shade. Hindwings over 1, termen hardly sinuate ; grey ; cilia light grey, towards tornus ochreous-whitish, base ochreous-whitish.

S.W. Africa.—Otjiwarongo (R. W. Tucker) ; one specimen.

Gen. Stomopteryx Hein.

Stomopteryx frivola, n. sp.

♂ 15 mm. Head and thorax grey irrorated dark violet-fuscous, lower edge of face whitish. Palpi whitish irregularly mixed dark fuscous. Forewings with apex pointed, termen very oblique ; 6 separate ; violet-grey irrorated blackish ; stigmata forming small cloudy darker spots followed by slight whitish-grey-ochreous scales, discal approximated, plical obliquely before first discal ; an irregular whitish angulated transverse line at $\frac{3}{4}$, tinged greyish-ochreous in disc, on costa forming a small spot ; cilia pale grey, basal half sprinkled blackish. Hindwings with termen slightly sinuate, grey; cilia pale grey.

Cape Province.—Sneeuw Kop, Wellington, 5000 feet, November (K. H. Barnard); one specimen.

Gen. Sophronia Hübn.

Sophronia aquilex, n. sp.

♂♀ 12 mm. Head white. Palpi white, second joint with a broad fuscous band. Thorax white, patagia dark fuscous. Abdomen whitish. Forewings rather narrow, costa gently arched, apex pointed, termen sinuate, very oblique; rather dark fuscous; a broad white costal streak from base to $\frac{5}{6}$, pointed posteriorly and having a slender streak of blackish irroration along upper edge from $\frac{2}{5}$ of costa to its extremity, lower edge also margined with scattered blackish scales; a moderate white dorsal streak from base to tornus, apex suffused; cilia white, towards tornus and towards costal origin light grey, a black basal line round apical portion of costa and termen to tornus, and two blackish apical hooks from costal lines. Hindwings whitish-grey; cilia whitish.

Cape Province.—Montagu, October (K. H. Barnard); three specimens.

Gen. Anarsia Zell.

Anarsia permissa, n. sp.

♂ 13 mm. Head, palpi, and thorax whitish irregularly irrorated blackish. Forewings rather narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; grey-whitish irregularly irrorated blackish-grey; an oblique blackish rhomboidal spot on middle of costa, three short oblique blackish streaks from costa between this and base, and two beyond it; many irregularly strewn rather short black longitudinal lines more or less edged with white; an irregular elongated dark grey patch in disc before middle, edged above with white, and a similar oval blotch in disc beyond $\frac{2}{3}$; a slender irregular blackish streak along posterior portion of costa and termen; cilia grey, base ochreous-whitish, obscurely barred blackish. Hindwings pale subhyaline grey, with purple-blue reflections, suffused with grey on veins and margins; a black median hair-pencil reaching from base to $\frac{1}{3}$; cilia light grey. Forewings beneath with short flat tuft of black scales before middle of cell.

S.W. Africa.—Windhoek, December (R. W. Tucker); one specimen.

GAMBROSTOLA, n. g.

Head with appressed scales; ocelli posterior; tongue developed. Antennae $\frac{4}{5}$, in ♂ rather stout, simple, basal joint elongate, without pecten. Labial palpi long, recurved, second joint with appressed scales, terminal joint as long as second, moderate, acute. Maxillary palpi very short, filiform, appressed to tongue. Posterior tibiae rough-scaled above. Forewings with 1*b* furcate, 2 from towards angle, 3 and 4 stalked from angle, 7 and 8 stalked, 7 to costa, 11 from middle. Hindwings 1, elongate-ovate, cilia $\frac{2}{3}$; 3 and 4 short-stalked, 5 approximated, 6 and 7 stalked.

Allied to the *Chelaria* group.

Gambrostola imposita, n. sp.

♂♀ 12 mm. Head and thorax pale ochreous. Palpi ochreous-whitish, basal half and a subapical ring of second joint, and two rings of terminal joint blackish. Abdomen ochreous-whitish tinged grey. Forewings elongate, costa gently arched, apex obtuse, termen obliquely rounded; pale ochreous, with scattered blackish and fuscous scales; costal edge dark fuscous towards base; a small sub-basal blackish dot beneath costa; stigmata blackish, plical rather obliquely before first discal, second discal larger; a spot of grey suffusion with some black scales on costa beyond second discal; undefined marginal dots of blackish irroration round posterior part of costa and termen; cilia ochreous-yellowish, with a few fuscous points. Hindwings pale grey; cilia whitish-ochreous.

NATAL.—Krantzkop, November (K. H. Barnard); two specimens.

Gen. DICHOMERIS Hübn.

Dichomeris orthacma, n. sp.

♂♀ 13 mm. Head and thorax white. Palpi white, second joint fuscous except scales of apical edge, anterior edge of terminal joint dark fuscous. Forewings with apex somewhat produced, acute, termen extremely oblique; white irregularly sprinkled fuscous; a rather broad fuscous median streak from base to apex, upper edge mixed dark fuscous; a black dot on fold beneath middle of wing (plical stigma); a marginal series of black dots on apical part of costa and termen; cilia white, towards tornus greyish-tinged at apex, a light fuscous bar. Hindwings whitish-grey; cilia ochreous-whitish.

CAPE PROVINCE.—Witte R., Wellington, 1500 feet, November

(K. H. Barnard); two specimens. The cubital pecten of hindwings in this and the next species is very slightly developed.

Dichomeris ithyaula, n. sp.

♀ 21 mm. Head and thorax white, patagia fuscous. (Palpi missing.) Forewings with apex pointed, termen slightly sinuate, very oblique; white; costal edge dark fuscous from base to $\frac{4}{5}$; a rather broad dark fuscous median streak from base to apex; dorsal edge dark fuscous from beyond middle to tornus; several black marginal dots on apical part of costa and termen; cilia white, on costa fuscous except near apex, on tornus light fuscous, a fuscous apical bar. Hindwings pale greyish; cilia whitish-grey-ochreous.

Cape Province.—Witte R., Wellington, November (K. H. Barnard); one specimen. Near *aulotoma* and the preceding species.

Dichomeris interamna, n. sp.

♂ 19 mm. Head white. (Palpi missing.) Thorax fuscous, with a white stripe on each side of back. Forewings elongate, rather narrow, costa slightly arched, apex pointed, termen very obliquely rounded; fuscous; a white streak along basal third of costa; a white subcostal stripe from beneath apex of this to costa just before apex; a white stripe from base of dorsum beneath fold to termen above tornus, produced on termen to near apex and with a dark line dividing its upper portion towards termen; cilia fuscous, white on markings (imperfect). Hindwings over 1, grey; cilia pale bronzy-grey.

Transvaal.—Barberton, October (Edwards); one specimen.

Gen. Oegoconia Staint.

Oegoconia syndesma, n. sp.

♂ 13 mm. Head whitish-ochreous slightly speckled grey. Palpi ochreous-whitish sprinkled blackish, terminal joint with blackish median ring. Thorax ochreous-whitish sprinkled grey, patagia irrorated dark fuscous. Abdomen whitish-ochreous. Forewings rather narrow, costa gently arched, apex pointed, termen very obliquely rounded; whitish-ochreous sprinkled dark grey; a dark fuscous spot on base of costa, and irregular elongate blotches before and beyond middle, suffusedly confluent beneath with stigmata; stigmata forming cloudy blackish spots, plical somewhat before first discal, second discal transverse; a dark fuscous apical blotch, extended as a narrow fascia along termen; cilia ochreous-grey-whitish, base sprinkled dark fuscous. Hindwings ochreous-whitish; cilia whitish-ochreous.

Cape Province.—Oudebosch, December (K. H. Barnard); one specimen.

METACHANDIDAE.

Gen. Metachanda Meyr.

Metachanda oxyacma, n. sp.

♂ 11 mm. Head pale ochreous-yellowish. Palpi white, second joint grey except apex. Thorax dark purple-grey. Abdomen greyish. Forewings elongate-lanceolate; purplish-grey irrorated dark fuscous; stigmata black, partially but strongly margined pale ochreous, plical very obliquely before first discal, a similar spot on dorsum before second discal; an acutely angulated indistinct whitish-ochreous subterminal line rising from a whitish-ochreous spot on costa at $\frac{2}{3}$; cilia bronzy-greyish sprinkled dark fuscous. Hindwings pointed, grey; cilia light bronzy-greyish.

Cape Province.—Montagu, October (K. H. Barnard); one specimen.

COSMOPTERYGIDAE.

Gen. Dorodoca Meyr.

Dorodoca eometalla, n. sp.

♀ 13 mm. Head white, collar faintly rosy-tinged. Palpi whitish. Eyes crimson. Thorax bronzy, a central stripe and patagia pale glossy grey. Abdomen dark fuscous, apex ochreous. Forewings bronzy-brown, dorsal edge white towards base, suffused pale violet-metallic above at base, a white transverse mark from costa near base; shining white transverse fasciae at $\frac{1}{4}$ and beyond middle, becoming pale violet-metallic towards costa, widest on dorsum, edged with black scales; beyond second a white costal streak to $\frac{5}{6}$, edged black beneath and separated by a blackish space from a triangular white apical spot, and a violet-metallic streak along termen to apical spot, enclosing a white tornal dot, space between these ochreous; cilia light grey, on termen basal half blackish, at apex an ochreous basal dot, above apical spot a white patch. Hindwings and cilia light grey.

S.W. Africa.—Ondongua Ovamboland, February (K. H. Barnard); one specimen, which lacks a forewing, but is very distinct.

Gen. Ascalenia Wocke.

Ascalenia albitergis, n. sp.

♀ 8 mm. Head and antennae dark fuscous. Palpi dark fuscous minutely speckled whitish. Thorax white. Abdomen grey. Forewings lanceolate ; dark fuscous ; an angulated line of whitish specks crossing wing at $\frac{3}{4}$; cilia grey, round apex speckled whitish. Hindwings and cilia grey.

S.W. Africa.—Tsumeb, January (R. W. Tucker) ; one specimen.

OECOPHORIDAE.

Oxyscopa, n. g.

Head with appressed scales ; ocelli posterior ; tongue developed. Antennae $\frac{3}{4}$, in ♂ shortly and evenly ciliated, basal joint elongate, with pecten. Labial palpi moderate, curved, ascending, second joint with appressed scales, hardly reaching base of antennae, terminal joint half second, acute. Maxillary palpi obsolete. Posterior tibiae clothed with long hairs above and beneath. Forewings 1*b* furcate, 2 from angle, 3 absent, 7 and 8 stalked, 7 to termen, 11 from middle. Hindwings under 1, ovate-lanceolate, cilia $1\frac{2}{3}$; 3 absent, 4 from angle, 5-7 tolerably parallel.

Belongs to *Ocystola* group.

Oxyscopa dealbata, n. sp.

♂ 13 mm. Head and thorax grey-whitish. Palpi white, second joint sprinkled dark grey near tip, terminal joint dark grey except tip. Antennal ciliations hardly 1. Abdomen grey with bronzy-ochreous segmental blotches, anal tuft grey-whitish. Forewings elongate, costa gently arched, apex pointed, somewhat produced, termen sinuate, very oblique ; light glossy violet-grey, tips of scales whitish ; a whitish streak along costa from near base to near apex ; second discal stigma cloudy, grey ; cilia grey-whitish. Hindwings pale grey ; cilia grey-whitish.

Cape Province.—Montagu, October (K. H. Barnard) ; one specimen.

Phratriodes, n. g.

Head with appressed scales, side-tufts loosely spreading ; ocelli posterior ; tongue developed. Antennae $\frac{4}{5}$ (?), in ♂ moderately biciliated, basal joint moderate, without pecten. Labial palpi moderately long, curved, ascending, second joint with appressed scales, not reaching base of antennae, terminal joint $\frac{2}{3}$ of second, moderate, acute. Maxillary palpi rudimentary. Posterior tibiae clothed with hairs above. Forewings with 2 and 3 stalked from angle, 7 and 8 stalked, 7 to apex, 11 from middle. Hindwings 1, subovate, cilia $\frac{2}{5}$; 3 and 4 connate, 5–7 parallel.

Related to *Eulechria* group.

Phratriodes curvisignis, n. sp.

♂ 18 mm. Head and thorax grey mixed white. Palpi grey, second joint white towards base, terminal joint sprinkled white towards base. Forewings moderately elongate, costa slightly arched, apex obtuse, termen obliquely rounded; fuscous, slightly sprinkled whitish; a white dot beneath costa at base; a cloudy whitish streak leaving costa obliquely at $\frac{1}{3}$, curved downwards and returning above middle of disc to near costa at $\frac{2}{3}$; some irregular whitish suffusion towards apex; cilia fuscous, basal half slenderly barred whitish round apex. Hindwings dark grey, lighter anteriorly; cilia light grey, a darker sub-basal shade.

Cape Province.—Rondebosch (Penfold); one specimen.

SELIDORIS, n. g.

Head with appressed hairs, side-tufts loosely raised; ocelli posterior; tongue developed. Antennae in ♂ 1, stout, simple, in ♀ somewhat shorter, slender, basal joint moderate, with small pecten at base. Labial palpi very long, recurved, second joint thickened with appressed scales, somewhat compressed towards apex beneath, terminal joint in ♂ shorter, in ♀ as long as second, moderate, acute. Maxillary palpi very short, filiform, appressed to tongue. Posterior tibiae clothed with rough hairs above. Forewings with 1*b* furcate, 2 from before $\frac{3}{4}$, 3 from angle, 3–5 approximated, 7 and 8 stalked, 7 to costa, 11 from somewhat before middle. Hindwings 1, elongate-ovate, cilia $\frac{2}{3}$; 3 and 4 connate, 5–7 parallel.

Type *deligata* Meyr. (referred to *Cryptolechia*). Costa of forewings roughened with scales before middle. The genus is allied to *Carcina*.

Gen. CERANTHES Meyr.

Ceranthes apellodora, n. sp.

♂ 11 mm. Head shining whitish, a pale rosy central stripe on crown. Palpi whitish. Thorax ochreous-whitish, patagia and a dorsal stripe pale rosy. Abdomen shining whitish. Forewings elongate, costa gently arched, apex pointed, somewhat produced, termen very obliquely rounded ; shining whitish ; a dull rosy thick subdorsal streak from base to a blue-grey spot surrounded with dull rosy at middle of dorso-termen ; anterior half of disc suffused pale yellow, with some pale rosy suffusion towards fold ; discal stigmata minute, blackish, surrounded with purple-grey suffusion, between these some pale yellow suffusion beneath which is a spot of light rosy-ferruginous suffusion with some grey scales, above this an elongate patch of light rosy-ferruginous suffusion extending along costa from middle nearly to apex, including an indistinct greyish streak posteriorly ; some light rosy-ferruginous suffusion along termen ; cilia ochreous-whitish, tinged rosy round apex. Hindwings whitish ; a large pale whitish-ochreous discal patch margined posteriorly and beneath with grey suffusion ; a whitish-ochreous hair-pencil lying along costa from base to middle ; cilia whitish. Forewings beneath whitish-yellowish to nearly $\frac{3}{4}$ from base, edged posteriorly by a faint greyish curved line.

Cape Province.—Montagu, October (K. H. Barnard) ; three specimens.

XYLORYCTIDAE.

Gen. Odites Wals.

Odites superscripta, n. sp.

♀ 16 mm. Head, palpi, and thorax whitish-ochreous, thorax dorsally faintly pinkish-tinged. Forewings moderate, apex obtuse-pointed, termen hardly rounded, rather oblique ; whitish-ochreous ; second discal stigma small, blackish, a transverse mark of dark fuscous irroration from costa directly above it ; two or three dark fuscous scales towards termen below middle ; cilia whitish-ochreous. Hindwings and cilia whitish-ochreous.

S.W. Africa.—Nuragas, January (R. W. Tucker) ; one specimen.

HELIODINIDAE.

Gen. Eretmocera Zell.

Eretmocera contermina, n. sp.

♂ 11 mm. Head and thorax dark grey. Palpi whitish. Antennae dark fuscous. Abdomen ochreous-yellowish, irregularly dark fuscous towards base of segments, anal tuft blackish, yellowish centrally towards apex and beneath. Forewings elongate-lanceolate; dark greyish-fuscous; an ochreous-whitish spot on costa at $\frac{4}{5}$; cilia dark grey. Hindwings and cilia dark grey.

S.W. Africa.—Tsumeb, December (R. W. Tucker); one specimen.

Eretmocera syleuta, n. sp.

♂ 12 mm. Head and thorax dark violet-fuscous, collar slightly mixed whitish. Palpi dark fuscous, somewhat mixed whitish, towards base suffused whitish. Antennae blackish (tip broken). Abdomen dark violet-fuscous, segmental margins whitish-grey, anal tuft blackish. Forewings elongate-lanceolate; dark violet-grey, somewhat lighter-mixed posteriorly; cilia grey. Hindwings dark fuscous; cilia dark grey.

Cape Province.—Montagu, October (K. H. Barnard); one specimen.

GLYPHIPTERYGIDAE.

Gen. Glyphipteryx Hübn.

Glyphipteryx argophracta, n. sp.

♀ 10 mm. Head and thorax dark grey. Palpi with four whorls of dark fuscous whitish-tipped scales and apex whitish, second joint with rough projecting hairs beneath. Forewings elongate, rather dilated, costa gently arched, apex obtuse, termen obliquely rounded; greyish-bronze, suffused dark fuscous towards base; two narrow white blackish-edged fasciae, widest dorsally, first at $\frac{1}{4}$, hardly curved, second from before middle of costa to beyond middle of dorsum; a transverse golden-metallic streak from a white dot on costa beyond middle reaching half across wing; a rather inwards-oblique white striga from costa at $\frac{3}{4}$ meeting an erect golden-metallic streak from dorsum before tornus, area beyond this black except near costa, marked with two fine whitish-yellowish streaks on and near upper edge and one below middle, three prismatic-golden-metallic dots triangularly arranged in upper portion and two in lower portion, a white mark on costa near apex above this; cilia white, basal half within a dark grey line grey-yellowish, on costa dark fuscous. Hindwings dark grey; cilia grey.

Cape Province.—Capetown, February (K. H. Barnard); one specimen.

HYPONOMEUTIDAE.

Gen. Ethmia Hübn.

Ethmia pericentrota, n. sp.

♂♀ 15–16 mm. Head and thorax ochreous-white, a black dot on thorax behind collar. Palpi ochreous-whitish, a grey lateral streak on second joint except towards apex. Abdomen ochreous-white, 3 basal segments pale ochreous, next 3 whitish-grey except on sides. Forewings with termen slightly rounded, oblique ; ochreous-white ; costal edge black towards base ; a large black dot near base in middle ; stigmata forming small round black spots, plical rather obliquely before first discal, an additional spot midway between plical and base ; a marginal series of about 9 rather large irregular black dots round posterior part of costa and termen ; cilia ochreous-whitish. Hindwings light grey ; cilia ochreous-whitish.

S.W. Africa.—Ongka, Mafa Ovamboland, February, March (K. H. Barnard) ; three specimens.

Ethmia leucocirrha, n. sp.

♂ 23 mm. Head ochreous-yellow. Palpi whitish-yellowish, sprinkled dark grey. Thorax pale yellowish (injured). Abdomen yellowish, last 3 segments with dark fuscous bands. Forewings with termen rounded, somewhat oblique ; light ochreous-yellow overlaid with white ; small black dots beneath costa near base and at $\frac{1}{4}$; stigmata small, black, plical obliquely beyond first discal, a similar dot midway between plical and base, second discal larger ; cilia white. Hindwings pale yellowish overlaid with white ; cilia yellowish-white.

S.W. Africa.—Otjituo, January (R. W. Tucker) ; one specimen.

COLEOPHORIDAE.

Gen. Enscepastra Meyr.

Enscepastra longirostris, n. sp.

♂♀ 15–17 mm. Head, palpi, and thorax grey speckled whitish, palpi 6. Forewings narrow-lanceolate, dorsum and termen almost straight ; dark grey speckled whitish, in ♀ wholly suffused ochreous-brown except on margins ; stigmata in ♂ obscured, in ♀ minute, black, plical very obliquely before first discal ; cilia light grey. Hindwings with 4 present ; light bluish-grey ; cilia pale grey.

Cape Province.—Montagu, October (K. H. Barnard) ; two specimens.

ELACHISTIDAE.

Gen. Elachista Treitsch.

Elachista justificata, n. sp.

♂ 9 mm. Head white. Palpi dark grey, tip white. Thorax ochreous-whitish. Forewings lanceolate; ochreous-whitish tinged grey; plical and second discal stigmata small, black; cilia ochreous-whitish. Hindwings pale grey; cilia ochreous-whitish.

Cape Province.—Cedarbergen, 4–5000 feet, September (K. H. Barnard); one specimen.

GRACILARIADAE.

Gen. Acrocercops Wall.

Acrocercops triceros, n. sp.

♂ 9 mm. Head and thorax grey. Palpi grey-whitish, second joint rather short, apical scales rather expanded, dark grey, terminal joint longer, with two bands of dark fuscous irroration. Forewings dark grey; a yellow-ochreous streak along termen margined anteriorly by a very oblique fine silvery-white streak from tornus, and receiving three converging white strigulae from apical part of costa, last limiting a large round black apical dot; cilia grey, at apex whitish with two short black hooks. Hindwings and cilia rather dark grey.

S.W. Africa.—Mafa Ovamboland, February (K. H. Barnard); one specimen.

Gen. Parectopa Clem.

Parectopa flora, n. sp.

♂ 10 mm. Head whitish. Palpi slender, whitish, second joint crimson except apex, terminal joint with crimson supramedian ring. Thorax crimson, posterior half whitish. Abdomen light grey. Forewings narrow, parallel-sided, obtuse; light crimson; six pale yellow oblique spots from costa finely edged with dark fuscous scales, third terminating in a longitudinal dark fuscous dash, last three shorter and terminated beneath by a praeapical oval blotch of dark fuscous suffusion; three pale yellow dorsal blotches finely edged with dark fuscous, first semioval, second oblique-triangular terminated by a spot of dark fuscous suffusion edged above by a fine black line touching second costal spot, third triangular; a fine black curved line near and parallel to apical and terminal margin, limiting the praeapical dark blotch, upper part of termen within this crimson, lower white, terminal edge shortly blackish towards middle ; cilia crimson, with a black apical hook, below this a pale yellow patch, on tornus grey. Hindwings and cilia grey.

NATAL.—Durban, November (H. W. Bell-Marley) ; one specimen.

EPERMENIADAE.

Gen. EPERMENIA Hübn.

Epermenia ithycentra, n. sp.

♂ 10 mm. Head, palpi, and thorax whitish, finely sprinkled dark fuscous. Abdomen light grey. Forewings narrowly elongate-lanceolate ; pale grey finely speckled dark fuscous ; small black dots towards costa at $\frac{1}{5}$ and $\frac{2}{5}$, connected with base by a faint streak of ochreous tinge ; black dots in disc before $\frac{1}{3}$, at middle, and $\frac{2}{3}$, also connected by a faint streak of ochreous tinge ; a black dot on fold (plical stigma) obliquely before second of these ; cilia grey-whitish speckled dark fuscous except towards tornus, with dark grey line almost on tips round apex, a small tooth of black-tipped scales on dorsum towards tornus. Hindwings light grey ; cilia pale greyish.

CAPE PROVINCE.—Zonder End Peak, 4000 feet, Caledon Div. (K. H. Barnard) ; one specimen.

LYONETIADAE.

Gen. HIEROXESTIS Meyr.

Hieroxestis iricharis, n. sp.

♂ 12 mm. Head, palpi, and thorax pale bronzy-greyish-ochreous. Abdomen iridescent whitish-grey. Forewings lanceolate, apex acutely produced ; iridescent grey ; costal edge whitish on median third ; a shining pale ochreous slender supramedian streak from base to an oval spot beneath middle of costa, a streak along fold from before $\frac{1}{3}$ to beyond $\frac{2}{3}$, and a costal streak from $\frac{2}{3}$ to apex : cilia light grey. Hindwings grey ; cilia light grey. Forewings beneath dull purple with bright green-blue iridescence.

CAPE PROVINCE.—Montagu, October (K. H. Barnard) ; one specimen.

Gen. HECTACMA Meyr.

Hectacma glossophora, n. sp.

♂ 10 mm. Head and thorax pale ochreous-yellowish, thorax with blackish lateral stripe. Palpi ochreous-whitish, a stripe on second joint, and base of terminal joint blackish. Forewings broad-lanceolate; 5 and 6 stalked; pale ochreous-yellowish; a slender dark fuscous costal stripe from base to $\frac{2}{5}$; a broad dark fuscous dorsal stripe from base to middle of wing; a narrow irregular dark fuscous stripe from disc before middle to termen below middle, thence rather wider along termen to apex; cilia pale ochreous-yellowish, at apex a grey bar. Hindwings and cilia whitish.

Cape Province.—Rondebosch (Penfold); one specimen. The stalking of veins 5 and 6 of forewings is exceptional, but does not invalidate the definition of the genus.

TINEIDAE.

Gen. Myrmecozela Zell.

Myrmecozela picroxesta, n. sp.

♂ 16 mm. Head, palpi, and thorax dark grey. Abdomen grey. Forewings elongate, costa gently arched, apex pointed, termen faintly sinuate, very oblique; 7 to costa; glossy grey irrorated with rather dark fuscous; extreme costal edge whitish from before middle to about $\frac{4}{5}$; cilia grey, base sprinkled fuscous. Hindwings rather dark grey; cilia grey.

Cape Province.—Zonder End Peak, Caledon Div., 4000 feet, December (K. H. Barnard); one specimen. The costal termination of vein 7 of forewings is abnormal in the genus.

Myrmecozela paurosperma, n. sp.

♀ 19 mm. Head dark fuscous, tips of hairs whitish. Palpi whitish-ochreous, second joint and apex of terminal joint infuscated externally. Thorax ochreous with brassy-yellowish reflections. Forewings elongate, costa gently arched, apex obtuse-pointed, termen very obliquely rounded; yellow-ochreous; about 10 small scattered black dots or specks (3 of these representing stigmata), and a series along posterior half of costa and termen; cilia yellow-ochreous. Hindwings pale grey; cilia whitish-grey.

Cape Province.—Rondebosch (Penfold); one specimen.

Myrmecozela pogonopis, n. sp.

♂ 17 mm. Head dark fuscous. Palpi dark fuscous, second joint with long dense tuft beneath and some lateral bristles, terminal joint short. Antennae grey. Thorax brown. Forewings elongate, termen very obliquely rounded; brown, with purple reflections; cilia ochreous-whitish tinged grey. Hindwings and cilia light grey.

NATAL.—Kar Kloof, Durban, April (H. W. Bell-Marley); one specimen.

Gen. TINEA Linn.

Tinea doxochares, n. sp.

♂ 11 mm. Head white. Palpi dark fuscous. Antennae dark grey. Thorax white, a blackish transverse mark near posterior extremity, patagia ochreous-tinged. Abdomen glossy grey, anal tuft ochreous-whitish. Forewings elongate, apex pointed, termen very obliquely rounded; white; a triangular blackish blotch extending on costa from base to near middle, and reaching to fold; an oblique transverse blackish blotch from costa beyond middle reaching half across wing, narrowed beneath; dorsal area beneath fold irregularly suffused yellow-ochreous, dorsal edge strigulated blackish, with a wedge-shaped transverse blackish mark beyond middle; an oval blotch of yellow-ochreous suffusion in disc beyond middle, and a transverse blotch beyond this, followed by a blackish praeapical blotch on costa, connected with an irregular interrupted blackish streak along termen; cilia pale ochreous-grey, round apex whitish, towards middle of termen mixed dark grey. Hindwings violet-grey; cilia light grey.

CAPE PROVINCE.—Oudebosch, Caledon Div., December (K. H. Barnard); one specimen.

Tinea exolescens, n. sp.

♂ 13 mm. Head ochreous-grey-whitish. Antennae 1, grey. Thorax pale greyish-ochreous, shoulders dark fuscous. Abdomen ochreous-whitish. Forewings rather narrow, costa gently arched, apex pointed, termen extremely obliquely rounded; pale greyish-ochreous coarsely sprinkled grey; costal edge suffused dark grey towards base, a small ochreous-whitish spot beneath costa near base surrounded by grey suffusion; second discal stigma cloudy, obscurely darker; cilia whitish, coarsely sprinkled light grey towards base. Hindwings and cilia whitish.

CAPE PROVINCE.—Montagu, October (K. H. Barnard); one specimen.

Tinea achlyota, n. sp.

♂ 12–13 mm. Head, palpi, and thorax grey suffused white. Antennae $\frac{3}{4}$. Forewings elongate, costa moderately arched, apex obtuse-pointed, termen very obliquely rounded; grey with strong white gloss; cilia whitish. Hindwings pale greyish, with iridescent white gloss; cilia whitish.

CAPE PROVINCE.—Cedarbergen, 5000 feet, September (K. H. Barnard); three specimens. Near *chalcoxesta.*

GLAUCOSTOLA, n. g.

Head loosely rough-haired; ocelli posterior; tongue absent. Antennae $\frac{2}{3}$, basal joint moderate, without pecten. Labial palpi short, straight, slender, drooping, terminal joint longer than second, pointed. Maxillary palpi obsolete. Posterior tibiae clothed with long hairs above. Forewings with 2 short, from angle, 7 to costa, 11 from before middle. Hindwings $\frac{2}{3}$, lanceolate, cilia $2\frac{1}{2}$; 2–7 separate, rather approximated, 2–4 very short.

A curious insect of uncertain affinity.

Glaucostola oxyteles, n. sp.

♂♀ 9–10 mm. Head whitish mixed with grey hairs. Palpi white, externally grey. Thorax light grey. Forewings broad-lanceolate, apex slenderly produced, acute; shining submetallic greyish-bronze; a slender suffused white costal streak from base to near apex; cilia whitish, base tinged grey. Hindwings whitish-grey; cilia whitish.

CAPE PROVINCE.—Capetown, October (R. M. Lightfoot); Witte R., Wellington, 1500 feet, November (K. H. Barnard); three specimens.

PROBATOSTOLA, n. g.

Head rough-haired; ocelli posterior; tongue absent. Antennae $\frac{3}{5}$, in ♂ simple, joints closely set, basal joint short, stout. Labial palpi moderate, curved, ascending, second joint tufted with dense rough scales beneath, with some projecting lateral bristles, terminal joint short, loosely scaled, obtuse. Maxillary palpi obsolete. Posterior tibiae with appressed scales. Forewings with some raised scales (?); 1*b* furcate, 2 from angle, 7 to apex, 11 from towards base. Hindwings somewhat under 1, elongate-ovate, cilia $\frac{3}{4}$; 2 widely remote, 3–7 parallel.

Perhaps near *Drosica.*

Probatostola ochromalla, n. sp.

♂♀ 15–17 mm. Head and palpi light greyish-ochreous sprinkled dark grey. Thorax dark fuscous speckled whitish. Forewings elongate, costa moderately arched, apex obtuse, termen obliquely rounded ; brownish-ochreous suffusedly irrorated with whitish specks circled with dark fuscous ; markings light ochreous ; four irregular ill-defined transverse streaks, connected by a narrow irregular costal streak, first near base, fourth from $\frac{3}{4}$ of costa to tornus, a subcostal spot before third, three spots on costa posteriorly, and a streak of confluent spots just before termen : cilia pale ochreous irregularly barred with grey and dark fuscous irroration. Hindwings dark grey ; cilia grey.

S.W. Africa.—Namakunde, Ovamboland, February (K. H. Barnard) ; two specimens.

Gen. Encelidotis Meyr.

This genus has 3-jointed, filiform, folded maxillary palpi ; vein 6 of hindwings to costa.

Gen. Ellochotis Meyr.

This genus also has 3-jointed, very slender, folded maxillary palpi.

Ocnophila, n. g.

Head rough-haired ; ocelli posterior ; tongue absent. Antennae $\frac{2}{3}$, in ♂ shortly ciliated, basal joint short, without pecten. Labial palpi long, subascending, second joint thickened with scales, tufted beneath with long rough scales, terminal joint much shorter, slender, tolerably pointed. Maxillary palpi short, 3-jointed, porrected, loosely scaled. Posterior tibiae loosely haired. Forewings with 1*b* furcate, 2 from angle, 7 to costa, 11 from before middle, secondary cell distinct. Hindwings 1, elongate-ovate, cilia $\frac{3}{4}$; 2–4 parallel, 5 and 6 somewhat approximated, 7 parallel.

Type *autocrypta* Meyr. Perhaps nearest *Psephologa.*

Ocnophila autocrypta, n. sp.

♂ 18 mm. Head, palpi, and thorax fuscous. Forewings elongate, moderate, costa gently arched, apex obtuse, termen very obliquely rounded ; fuscous : cilia concolorous, towards tips paler and whitish-tinged. Hindwings rather dark grey ; cilia light grey or whitish.

Cape Province.—Goudini Road (Worcester), and Zuur Vlakte, Wellington, 3000 feet, October (K. H. Barnard) ; two specimens.

Ocnophila tetraula, n. sp.

♀ 19 mm. Head white, centrally suffused fuscous. Palpi white, second joint bronzy-ochreous except apex. Thorax bronzy-ochreous, with two white stripes. Forewings as in *autocrypta*; shining bronzy-ochreous; a moderate white costal streak from near base to middle, thence as a slender line to about $\frac{3}{4}$; a rather irregular white streak pointed anteriorly from disc before middle to apex, edged blackish beneath and shortly above before apex; a white submedian streak from base to beneath end of cell, edged blackish beneath; an irregular elongate white mark edged blackish above near termen below middle; a slender white dorsal line from base to near tornus; cilia white, base suffused bronzy-ochreous, a blackish sub-basal line, tips suffused grey. Hindwings light grey; cilia pale greyish, round apex suffused white.

CAPE PROVINCE.—Zuur Vlakte, Wellington, 3000 feet, November (K. H. Barnard); one specimen.

Gen. ACOROSTOMA Meyr.

This genus has 3-jointed filiform maxillary palpi, appressed to face or porrected.

Acorostoma chrysochalca, n. sp.

♂♀ 14–17 mm. Head white, sometimes mixed grey. Palpi dark grey, apical edge white. Thorax white irrorated dark fuscous. Forewings with apex pointed, termen hardly rounded, rather strongly oblique; white, variably sprinkled blackish or with costal and dorsal thirds densely irrorated blackish; seven variable shining golden-ochreous blotches, viz., first oval subcostal near base, second elongate resting posteriorly on dorsum at $\frac{1}{3}$, third roundish in disc before middle sometimes confluent with second, fourth rather oblique-transverse from middle of dorsum, fifth transverse from costa beyond middle sometimes touching fourth or sixth, sixth tornal erect, seventh from costa near apex often connected with sixth; cilia white with rows of black points. Hindwings and cilia light grey.

CAPE PROVINCE.—Witte R., Wellington, 1500 feet, November (K. H. Barnard); four specimens.

Acorostoma isometra, n. sp.

♂ 11 mm. Head whitish, centrally tinged pale grey. Palpi light grey, apical edge whitish. Thorax whitish irrorated grey. Forewings with apex obtuse, termen rounded, rather strongly oblique; grey-whitish irrorated grey, a few scattered blackish scales; stigmata moderate, blackish, plical obliquely beyond first discal, almost as near to second; cilia whitish-grey sprinkled dark grey. Hindwings and cilia light grey.

Cape Province.—Witte R., Wellington, 1500 feet, November (K. H. Barnard); one specimen.

Patromasia, n. g.

Head with long rough hairs; ocelli posterior; tongue absent. Antennae $\frac{1}{2}$, in ♂ fasciculate-ciliated, basal joint short. Labial palpi moderate, porrected, second joint with rough projecting scales beneath, terminal joint shorter, loosely scaled, hardly pointed. Maxillary palpi obsolete. Posterior tibiae with rough hairs above. Forewings with 2 from angle, 7 absent, 11 from before middle. Hindwings under 1, elongate-ovate, cilia 1; 2–7 separate, 4 and 5 rather approximated.

Allied to *Eumasia.*

Patromasia petroglypta, n. sp.

♂ 9–12 mm. Head and thorax ochreous-whitish. Palpi ochreous-whitish sprinkled dark fuscous. Forewings elongate, costa gently arched, apex obtuse-pointed, termen very obliquely rounded; ochreous-whitish, slightly and irregularly sprinkled grey and dark fuscous; blackish-grey spots on costa at $\frac{1}{4}$, middle, and $\frac{2}{3}$, last sometimes reduced to two strigulae; spots of grey and blackish irroration above fold nearly beneath first and third of these, and some grey irroration on dorsum beneath these; two or three dark strigulae on costa posteriorly and termen; cilia ochreous-whitish, a few dark specks. Hindwings whitish-grey; cilia ochreous-whitish.

S.W. Africa.—Otjimbumbe, Kunene R., March (K. H. Barnard); two specimens.

Gen. Exanthica Meyr.

Exanthica atelacma, n. sp.

♂ 20 mm. Head, palpi, and thorax grey speckled whitish and dark fuscous. Abdomen whitish-ochreous, with segmental marginal rings of fuscous suffusion. Forewings elongate, costa slightly arched, apex obtuse, termen obliquely rounded; rather dark fuscous irregularly speckled whitish; stigmata black, plical and first discal forming oblique marks in the same line, plical rather anterior, these followed by a fasciate blotch of white suffusion, second discal smaller, transverse, a black dot beyond this; some undefined blackish dots along termen, preceded by white suffusion; cilia fuscous speckled white. Hindwings rather dark grey; cilia grey speckled whitish.

Cape Province.—Montagu, October (K. H. Barnard); one specimen. An interesting second species of the genus, immediately separated from the first by the absence of the dark triangular spot at apex.

Gen. NARYCIA Steph.

Narycia antibatis, n. sp.

♂ 15 mm. Head white with some grey hairs, face grey. Palpi very short, white, base of joints blackish. Thorax dark fuscous. Forewings elongate, costa gently arched, apex obtuse, termen very obliquely rounded; 7 and 8 stalked, 7 to apex; grey, irregularly and rather suffusedly mixed whitish, a few scattered black scales, especially towards termen; cilia white, with two dark grey lines. Hindwings grey; cilia grey, a sub-basal line of dark fuscous scales.

S.W. AFRICA.—Ongka, Ovamboland, February (K. H. Barnard); one specimen. A rather singular species.

Gen. PENESTOGLOSSA Rog.

Characters of genus derived from the following species:

Head loosely haired, forehead prominent, eyes large; ocelli posterior; tongue absent. Antennae $\frac{1}{2}$, in ♂ bipectinated, basal joint moderate, without pecten. Labial and maxillary palpi obsolete. Posterior tibiae with appressed scales. Forewings with 1*b* long-furcate, 2 from angle, 3 rather approximated, 4 and 5 connate, 7 and 8 stalked, 7 to apex (indefinite), 9 almost connate, 11 from middle. Hindwings 1, subovate, cilia $\frac{1}{4}$; 2 and 3 parallel, 4 and 5 stalked, 6 and 7 approximated at base.

Penestoglossa dyscrita, n. sp.

♂ 24–26 mm. Head whitish-grey. Antennal pectinations 5. Thorax grey mixed whitish. Forewings elongate, costa slightly arched, apex obtuse, termen obliquely rounded; whitish coarsely irrorated grey; a suffused white spot on end of cell: cilia whitish mixed grey, with a dark grey shade. Hindwings light grey; cilia whitish with a grey shade.

S.W. AFRICA.—Omaruru (J. S. Brown); four specimens.

Gen. MELASINA Boisd.

Melasina leucoconis, n. sp.

♂ 20 mm. Head, palpi, and thorax white. Antennal pectinations 3. Forewings elongate, costa gently arched, termen very obliquely rounded; pale greyish-ochreous suffusedly overlaid white; cilia white. Hindwings whitish-grey; cilia white.

S.W. Africa.—Ongka, Ovamboland, February (K. H. Barnard); one specimen.

Melasina araeopis, n. sp.

♂ 24–26 mm. Head, palpi, and thorax dark fuscous irrorated whitish. Antennal pectinations 5. Forewings elongate, costa gently arched, apex obtuse, termen rather obliquely rounded; grey closely irrorated blackish, irregularly and suffusedly strigulated with white. Hindwings grey, darker-speckled; cilia whitish-grey, a dark grey sub-basal line.

S.W. Africa.—Tsumeb, January (Köchig); two specimens.

Gen. Fumea, Haw.

Fumea fatalis, n. sp.

♂ 12–13 mm. Head, palpi, thorax dark fuscous, a few whitish hairs. Antennal pectinations 3. Forewings moderately broad, costa moderately arched, apex obtuse, termen nearly straight, oblique; dark fuscous; cilia fuscous. Hindwings dark fuscous; cilia fuscous.

Cape Province.—Cedarbergen, 4–5000 feet, September (K. H. Barnard); two specimens.

Gen. Sindonophora Meyr.

Sindonophora sutrix, n. sp.

♂ 11–12 mm. Head blackish with some white hairs. Palpi blackish, terminal joint as long as second, very slender, almost aciculate. Antennal pectinations 2. Thorax blackish. Forewings moderate, costa moderately arched, apex obtuse, termen hardly rounded, oblique; 7 and 8 stalked; dark fuscous; a rather narrow straight white fascia from middle of costa to beyond middle of dorsum; a direct white fasciate streak from costa at $\frac{4}{5}$ reaching half across wing, sometimes widened on costa; cilia white. Hindwings white, base narrowly suffused dark fuscous, sometimes a few grey scales on terminal edge; cilia white.

Cape Province.—Cedarbergen, 4–5000 feet, September (K. H. Barnard); three specimens.

Gen. Lampronia Steph.

Lampronia albifusa, n. sp.

♂ 14–16 mm. Head grey, sides and back of crown whitish. Palpi whitish-grey. Thorax light grey, patagia mixed whitish. Forewings elongate, costa gently arched, apex obtuse-pointed, termen very obliquely rounded ; light grey mixed and suffused white ; cilia whitish. Hindwings iridescent whitish-grey ; cilia grey-whitish.

Cape Province.—Goudini Road (Worcester), October (K. H. Barnard) ; two specimens.

HEPIALIDAE.

Gen. Dalaca Walk.

Dalaca rhodaula, n. sp.

♂ 26–27 mm. Head pale rosy mixed with dark grey hairs. Palpi very small, concealed in long hairs. Antennae $\frac{1}{3}$, moderately ciliated, joints submoniliform. Thorax rosy-brownish or rosy-grey mixed whitish. Forewings fuscous, variably marbled with light rosy markings edged first with white and then partially with blackish, these form especially six or seven roundish spots along costa, and a very strongly bisinuate streak in disc interrupted in middle and connected by three or four bars with dorsum ; a terminal series of small rosy-white spots ; cilia rosy-whitish barred fuscous. Hindwings grey ; cilia whitish-rosy obscurely barred greyish, on costa more distinctly, the dark markings forming series of cloudy spots.

Cape Province.—Kalk Bay and Capetown ; two specimens.

Dalaca amphiarma, n. sp.

♂ 36 mm. Head and thorax light brownish. Palpi $\frac{1}{2}$, brown. Antennae fuscous, compressed, closely lamellate-dentate, appearing simple. Abdomen with basal half clothed with long dense brown-whitish hairs. Forewings fuscous ; an irregular band composed of two partly confluent suffused white streaks from base to end of cell, where it sends a prominence towards dorsum, thence running with posterior edge straight to apex, margined on both sides with broad dark fuscous suffusion tending to form spots, a white mark in disc before middle above this surrounded with dark fuscous suffusion ; a terminal series of white crescentic spots ; cilia pale fuscous, base darker. Hindwings fuscous, paler anteriorly ; two irregular whitish shades from middle of disc to costa before apex ; a terminal series of crescentic whitish spots ; cilia as in forewings.

Cape Province.—Dunbrody, June (Rev. J. O'Neil), Kimberley, March (J. H. Power).

Gen. HEPIALUS Fabr.

Hepialus xenoctenis, n. sp.

♂ 31 mm. Head and thorax brown mixed whitish and dark fuscous. Palpi 1½, with appressed scales, whitish-fuscous. Antennae strongly bilamellate (2½). Abdomen fuscous, segmental margins whitish, two basal segments clothed with dense ochreous-whitish hairs. Forewings light fuscous, whitish-speckled; costa more whitish, with several small dark fuscous spots on basal half, and three towards apex; cell containing three transverse pairs of pale ochreous-yellowish spots outlined with dark fuscous and a seventh spot in apex, a white spot between upper spots of first two pairs and another beyond third pair, lower spot of third pair partly outside cell; area between cell and dorsum irregularly marbled with white and pale yellowish spots, edged with dark fuscous irroration; postmedian and subterminal series of pale ochreous-yellowish spots outlined with dark fuscous, three median spots of subterminal series white; a terminal series of smaller similar spots; cilia light grey, with white bars not reaching base. Hindwings grey; a dark fuscous transverse spot on costa near apex, and two marks transversely placed before it; cilia grey obscurely spotted with whitish suffusion.

CAPE PROVINCE.—Capetown (L. Péringuey); one specimen.

5. *The Oedemeridae of South Africa with Notes on some other African Oedemeridae* (*Coleoptera*).—By K. G. Blair, B.Sc., F.E.S.

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The family *Oedemeridae* seems to be but poorly represented in the African fauna ; not only is the number of species small but the number of individuals is also scanty. It is true that Fairmaire has described about fifteen species from Madagascar, while Pic (1922) has recently named several more from Madagascar and from tropical Africa ; but from South Africa one only, *Ananca hottentota*, Fairm., has been hitherto described. Others have existed for many years both in the British Museum and in the South African Museum, and it is at the request of the late Dr. L. Péringuey that the present attempt to work out this South African material is undertaken.

Of the forms now dealt with two only, one of which is an almost cosmopolitan species, can claim to have anything like a general distribution in South Africa ; of the remainder there exists usually but a single record, though in many cases two or more individuals are noted of each. Though not included in the fauna of South Africa proper, which for convenience sake may be taken as south of the Zambesi, certain species from Nyasaland, which bear a close affinity with those of Mashonaland, are included ; I take the opportunity to deal also with two further hitherto undescribed forms, one from Uganda and one from West Africa.

The classification adopted is that given by Seidlitz (1899).

Key to the Genera of South African Oedemeridae.

1. (2) Anterior tibiae with a single spur ; antennae of ♂ 12-jointed. (sub. fam. *Nacerdinae*) *Nacerda* Steph.
2. (1) Anterior tibiae with two spurs ; antennae in both sexes 11-jointed.
3. (10) Last joint of maxillary palpi more or less triangular, its apex at least as long as the inner side ; eyes at most with a broad shallow emargination near the antennae . . . . . sub. fam. *Asclerinae*
4. (5) Eyes entire ; antennae inserted some distance in front of them ; colour blackish . . . . *Melananthia* nov.
5. (4) Eyes with a broad shallow emargination in front ; antennae inserted close to them ; colour in part at least fulvous.
6. (7) Wings abortive. . . . . . *Apterosessinia* nov.

7. (6)	Wings fully developed.	
8. (9)	Mandibles bifid at apex	*Ananca* F. and G.
9. (8)	Mandibles simple at apex	*Sessinia* Pasc.
10. (3)	Last joint of maxillary palpi nearly parallel sided, its apex very short in relation to its length ; eyes subangularly emarginate.	(sub. fam. *Oedemerinae*) *Asclerosibutia* Pic

Nacerda melanura, L.

Linnaeus, Syst. Nat., 1758, vol. i, p. 403 (*Cantharis*).

Rufo-fulvous, with the tips of the elytra, the legs and the underside blackish.

The head is withdrawn not quite as far as the eyes in the prothorax ; the eyes moderately deeply emarginate ; the antennae inserted not quite in the emargination, the mandibles bifid at the tips.

♂. Rather slighter in build than the ♀, the head and sides of the thorax usually more or less clouded with fuscous ; the pygidium and 5th ventral segment of the abdomen both deeply cleft at apex (in the ♀ the apex of the pygidium has a small angular emargination).

Length.—9–13 mm.

Localities.—Table Mountain (W. Bevins) ; Darling (L. Péringuey) ; Grahamstown ; Touws River, November 1883 (L. Péringuey) ; Durban (J. P. Cregoe and H. W. Bell-Marley) ; also in Europe, Asia, North and South America.

This widely distributed species of Palaearctic origin is probably distributed largely by driftwood, in which the larva frequently lives. Apart from the generic characters, it is readily distinguished by its colour pattern from all other South African members of the family. From certain species of *Asclerosibutia* which also have the tips of the elytra black it is at once separated, in addition to its generic differences, by its head being concolorous with the prothorax.

MELANANTHIA gen. nov.

Elongate, subcylindrical, moderately densely pubescent. Head, excluding labrum, about as long as its width between the eyes, the latter strongly convex, entire, a little longer than wide, their long axis (viewed laterally) very oblique ; antennae slender, second joint about $\frac{1}{2}$ as long as third, 11-jointed in both sexes, inserted about equidistant from the eyes and the base of the mandibles ; labrum about half as wide again as long ; mandibles bifid at apex ; maxillary palpi with last joint triangular, apex about as long as inner side, rather more than half as long as outer ; last joint of labial palpi with sides equal and slightly divergent, apex rounded. Prothorax cordiform. Elytra parallel sided for three-quarters of their length, each with four costae extending almost to apex. Anterior tibiae with two small spurs at apex, penultimate joint of all the tarsi expanded and clothed beneath with dense fulvous pubescence, with a slight development of similar pubescence on the antepenultimate joints.

♂ with 5th ventral segment only about half as long as 4th ; 6th segment divided, forming two long narrow lobes.

♀, 5th ventral segment produced in a triangular lobe.

Closely related to *Chrysanthia* Schm., from which it differs in the lack of metallic colour, in having the head withdrawn to the eyes in the prothorax, the second joint of the antennae shorter, the labrum broader, etc.

M. costipennis sp. n.

Black, with the head and prothorax mainly testaceous, the antennae, mouth parts, except mandibles and mentum, and the gula, a spot on the vertex, and a median elongate patch on the thorax black ; legs entirely black except the front coxae yellow. Thorax a little wider than long, with a broad transverse depression across the middle, less intense in the median area ; pubescence of head and thorax golden except on the black areas, where it is black, and directed mainly towards the median line, near which it slopes forwards ; puncturation rather strong, coarser and more sparse on the depressed areas. Elytra with the margins and four costae on each strongly raised and shining, with rather sparse decumbent black pubescence directed backwards ; intervals densely granulose, with cinereous decumbent pubescence on each interval directed backwards and towards the middle line, so that it appears denser and whiter in the middle of each interval.

♂. The short 5th ventral segment with a small median projection and the sides more strongly produced, the 6th segment completely exposed, as two long laminae, separated and twisted in apical third, exposing a stout pointed median piece, dorsal to which projects the aedeagus, the terminal knob of which is separated by a sharp bifid notch on both dorsal and ventral sides ; again dorsal to this are two slender brown chitinous rods, the lateral lobes of the tegmen.

♀. The 5th ventral segment much longer than the 4th, the sides emarginate before the apex, thus forming a broad triangular median lobe; apex of pygidium entire.

Length.—9–12 mm.

Locality.—Pondoland, Port St. John, Oct. and Dec. 1923 (R. E. Turner).

1 ♂ and 3 ♀♀ of this striking species are before me. The strongly costate elytra, the effect of which is enhanced by the diversity of colour of the pubescence and its peculiar incidence, render the species at once recognisable.

Melananthia senex, sp. n.

Elongate, subparallel, black with a slight aeneous lustre, covered with a conspicuous decumbent white pubescence; the antennae, palpi, mandibles (with the exception of the tips), and legs, more or less testaceous.

Head across the eyes as wide as the prothorax, sharply constricted immediately behind the eyes; the latter almost contiguous with the front of the prothorax, not emarginate in front, strongly convex and prominent, the distance between them notably greater than that between the antennae; antennae inserted some distance in front of the eyes, slender, second joint elongate, $\frac{1}{3}$ as long as 3rd, 3rd to 10th cylindrical, decreasing slightly in length; mandibles bifid at apex; maxillary palpi normal, last joint triangular, not much longer than the preceding, its inner edge about as long as the apical. Thorax slightly longer than wide, feebly enlarged in anterior half, anterior border rounded, base bisinuate, disc convex without definite impressions, finely and evenly granulate-punctate except for a smooth median line in the posterior half; pubescence rather irregularly inclined, directed mainly forwards on the disc, transversely inwards along the basal border, leaving a narrow sub-basal line as well as the smooth line on the disc free of pubescence. Elytra parallel in basal half, thence arcuately narrowed to apex, sutural border slightly raised, disc punctured similarly to the thorax, pubescence directed backwards somewhat obliquely in alternating directions, leaving three rather indistinct dark lines where it is less crowded. Anterior tibiae with two spurs, basal joint of posterior tarsi a little longer than the rest together, penultimate joint cordiform, deeply excavate above, slightly wider than the preceding, claw-joint about as long as second; claws subdentate within at the base.

Length.—11 mm.

Locality.—Cape Town, 20th December 1911 (K. H. Barnard).

The type, ♀, is unique in the British Museum.

Differs from the type species of the genus in its more elongate, less cordiform thorax, and in the elytral costae being indicated by the trend of the pubescence rather than definitely present. With the discovery of the ♂ it may be found that a new genus is required for its reception. The uniformly blackish colour of the body, to which the conspicuous white pubescence gives a slate-grey appearance, at once distinguishes it from all other South African members of the family. In this respect it resembles the Egyptian *Probosca pallipes*, Oliv., but the latter has the eyes much less prominent, emarginate in front, and separated above by a distance scarcely greater than that between the antennal bases.

APTEROSESSINIA gen. nov.

Head sunk to the eyes in the prothorax; eyes large prominent, broadly but shallowly emarginate in front, separated by a space about equal to that between the antennal bases; antennae inserted close to the eyes, filiform, 2nd joint about $\frac{1}{4}$ as long as 3rd, mandibles dissimilar, left simple, right with a small tooth above before the apex; palpi not unusually large, last joint triangular, outer edge sinuate, inner much shorter than the apical. Thorax cordiform, rounded in front, disc convex without marked impressions. Elytra not much wider than the thorax, parallel, each separately narrowed and rounded at apex, hence dehiscent for some distance before apex, all four costae faintly evident; wings vestigial; pygidium exposed, sides convergent from base, apex broadly truncate; last ventral segment subtriangular, sinuate on each side and rounded at apex, not attaining tip of pygidium. Anterior tibiae with two spurs, tarsi slender, 1st joint of posterior tarsi as long as the rest together including the claws, penultimate joint cordiform, deeply excavate above, spongy pubescent beneath; claw joint as long as 2nd, more than half its length projecting beyond the penultimate, claws with a long curved tooth on inner side. Sexes very similar except that the ♀ is very much larger than the ♂.

The new species for which this genus is proposed bears a striking resemblance to the New Zealand form *Thelyphassa diaphana*, Pasc. though differing from it in numerous details. In the dissimilar mandibles it resembles *Alloxacis* Horn, though its micropterous state and projecting pygidium give it a very different aspect. From *Sessinia* it differs, besides being subapterous, in the toothed claws. The latter might almost be described as "split" as in the Meloïdae, the tooth being slender and curved, almost as long as the claw itself.

Apterosessinia peringueyi, sp. n.

Elongate, parallel, except for the eyes and the tips of the mandibles entirely testaceous, clothed with a moderately dense decumbent pale pubescence.

Head more or less nitid, finely and not very densely punctate. Thorax longer than wide (scarcely so in ♀), anterior margin rounded, sides strongly sinuate, hardly wider than the head across the eyes in ♂, considerably wider in ♀, base strongly bisinuate with raised border; disc punctured as the head, pubescence mainly directed obliquely inwards at the sides and forwards in the middle. Elytra scarcely wider than the widest part of the thorax, parallel, nearly flat behind, much more opaque than the thorax, but little more densely punctate and pubescent, reaching little beyond the base of the pygidium. Wings aborted, parallel, about half the length of the elytra.

♂. Eyes larger and more prominent, thorax more elongate, more strongly sinuate at the sides. The genital armature seen from beneath, lying within the concavity of the pygidium, exhibits the following pieces, viz., 6th ventral segment consisting of a pair of lanceolate lobes lying horizontally, each of these near the base is suddenly expanded to form a large unciform process which nearly meets its fellow; between these is a median slender, clavate, hairy process, its tip not quite attaining the tips of the above-mentioned lobes; dorsal to this the tegmen gives off two somewhat scimitar-shaped lobes held vertically between the lobes of the 6th segment and projecting a little beyond them, while above them lies the median lobe, flattened laterally with on each side before the tip a fine barb on the ventral edge (cf. *Oncomera*, Sharp and Muir, Trans. Ent. Soc. Lond., 1912, p. 554, pl. lxx, fig. 181).

Length.—(Average) 13 mm. (9–18).

♀. Larger and more stoutly built, eyes smaller and less convex, thorax shorter, less strongly sinuate at the sides, considerably wider than the head across the eyes; pygidium and 5th ventral segment very similar to those of the ♂; colour a little redder.

Length.—20 mm.

Localities.—Cape Province, Mossel Bay, 1913 (J. H. Power); Cape Town, 1915, and Muizenberg, 1906 (Dr. L. Péringuey).

All from the South African Museum.[1]

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[1] The types of this and of other species described from the South African Museum have been generously presented to the British Museum.

Ananca Fairm. and Germ.

To this genus, originally proposed for certain Chilian species, I assign numerous *Sessinia*-like forms which differ from *Sessinia* Pasc. (type *livida*, F.) in having the mandibles bifid at the apex. This character is not always easily perceptible from above, especially when the jaws are closed, but if examined from beneath the deep groove that leads up to the apex can usually be seen even when the extreme tips are concealed. Fairmaire used the name for a considerable number of species from Madagascar, though some of these no doubt belong elsewhere. His remarks (1897) on the excessive rarity of the males of most of the species are not borne out by the material now before me, but there is reason to suppose that he frequently failed to recognise this sex. From the description he gives of the ♂ characters of *A. helvola*, Klug, a species unknown to me, it would appear to be wrongly placed in this genus, since he describes a strong sexual dimorphism in the apparent terminal segments of the abdomen, whereas in *Ananca* as here understood such dimorphism is remarkably slight; the probability is that many of the specimens presumed by Fairmaire on account of the simple abdomen to be female were in reality male. When the apex of the abdomen gapes the genitalia, enclosed between the lobes of the 6th ventral segment, can usually be seen lying within the hollow of the pygidium; the terminal papillae of the ovipositor of the ♀ usually at once make that sex recognisable.

Key to the South African Species of Ananca.

1. (6) Antennae, palpi, tibiae and tarsi black; head and thorax, underside, and femora fulvous.
2. (5) Elytra black, narrowly bordered with flavous, sometimes with a more or less broad transverse median band flavous.
3. (4) Build stout; apex of elytra more broadly flavous than the margins; transverse yellow band frequently present . *inconstans*, sp. n.
4. (3) More slender; yellow margin of elytra interrupted at apex; no transverse median band . . . . *marginipennis*, sp. n.
5. (2) Elytra fulvous . . . . *nigrimembris*, sp. n.
6. (1) Antennae, palpi and legs pale.
7. (8) Antennae annulated, apical half of the joints fuscous; colour brownish testaceous . . . . *hottentota*, Fairm.
8. (7) Antennae and legs uniformly pale.
9. (12) Elytra finely and densely punctate and pubescent, not paler than the thorax; abdomen not fuscous.
10. (11) Colour brownish testaceous; last joint of palpi normal, triangular . *holoxantha*, Har.

11. (10) Colour pale greyish fulvous, elytra with the base and a transverse band beyond the middle indistinctly darker; last joint of palpi subcrescentic *subfasciata*, sp. n.
12. (9) Elytra rather sparsely punctate and pubescent, paler than the head and thorax; abdomen fuscous . . . . *fusciventris*, sp. n.

Ananca inconstans, sp. n.

Robust, reddish yellow, with the antennae, palpi, tibiae and tarsi, and the greater part of the elytra black; the latter have an orange border expanded at the apex, and frequently an irregular band of the same colour, varying greatly in width in different specimens, across the middle.

Head sunk almost to the eyes in the prothorax, moderately strongly punctate, each puncture with a scarcely visible hair. Eyes large, not very convex, widely emarginate in front, slightly more approximate above than the antennal bases. Antenna inserted close to eyes, rather stout, filiform, 2nd joint about $\frac{1}{3}$ as long as 3rd. Mandibles bifid at apex; palpi slender, last joint about $\frac{1}{2}$ longer than the second, its outer edge sinuate, the inner edge not very divergent (about 30°), nearly as long as the apical. Thorax cordiform, a little wider than the head across the eyes, about as wide as long, widest near the front thence sharply narrowed anteriorly and more gently so towards the base, which is bisinuate with a raised border; disc uneven, with a broad depression across the anterior half, with extensions towards the anterior angles, the middles of the sides, and to a median basal depression; surface strongly, rather densely, punctate with scarcely visible pubescence. Elytra widest behind the middle, not very convex transversely, finely granulate, with a double pubescence, very fine decumbent with sparser stronger semi-erect hairs interspersed. Tarsi stout, basal joint of posterior tarsi longer than the rest together, penultimate joint cordiform, excavate above, with a dense golden pubescence beneath, scarcely wider than the preceding.

Sexes very similar; ♂, pygidium cleft at apex, genital armature very similar to that of *Apterosessinia* described above, but stouter, with median lobe more pointed, and the subapical barbs stouter and more divaricate, thus approaching the form of an arrow head, with a second pair of barbs some distance behind them.

Length about 13 mm. (10–17 mm.).

Localities.—Nyasaland, Mlanje, 8th November 1912 (S. A. Neave); Zomba (H. S. Stannus); Natal, Durban, Malvern, Mpanzi R. (G. A. K. Marshall); Cape Province, Mossel Bay (Overbeek); Ngami.

The colour pattern is independent of sex, but from the limited material before me there may be some connection with the geographical distribution of the species. Thus I have forms in which the transverse bar has disappeared more or less entirely from Nyasaland and Natal (Malvern and Durban); the form with the band normal from Natal and Ngami, that in which it has increased so as to occupy almost half the length of the elytra from Mossel Bay and Mpanzi R. Further collecting, however, may demonstrate that all these forms may occur together.

This type of coloration is very unusual in the family, though found in certain Australian species, e.g. *Copidita languida*, Blkbn. and others, and in *S. Moorei*, Montr. from New Caledonia and Fiji.

Ananca marginipennis, sp. n.

Slender, flavous, with the antennae, palpi, tibiae and tarsi, and elytra black, the latter with a narrow flavous border which is not continued round the apex; head and thorax more or less marked with fuscous.

Head not quite sunk to the eyes in the prothorax, not notably constricted behind the eyes, finely and moderately densely punctate, with a fuscous patch between the eyes though sometimes not reaching them. Eyes large, not very convex, broadly but not deeply emarginate in front. Antennae inserted close to the eyes, slightly more approximate than the latter, filiform, attaining (♂) about the middle of the abdomen, 2nd joint rather more than $\frac{1}{3}$ the length of the 3rd; mandibles bifid at apex; last joint of palpi with the inner edge little more than $\frac{1}{2}$ as long as the apical. Thorax in ♂ not quite as wide as the head across the eyes, slightly longer than wide, in ♀ a little wider than the head and about as wide as long, disc punctured and pubescent as the head, with a large shallow depression on each side about the middle. Elytra parallel, about 3 times as long as wide, each with 4 raised lines of which the 2 outer are very faint, finely and moderately densely punctate, with the intervals minutely rugose, pubescence simple, golden, and moderately dense. Anterior tibiae bispinose, tarsi moderately stout, basal joint of posterior tarsi longer than the rest together, penultimate joint cordiform, wider than the preceding, deeply excavate above; all the joints except the claw-joint clothed beneath with a dense golden pubescence, that on the second joint apparently of a velvet-like character similar to that of the penultimate.

Length.—9–11 mm.

Locality.—Mashonaland, Chirinda, October 1905; Mt. Chirinda, November–December 1911 (G. A. K. Marshall).

Of the African forms this only in any way resembles the unbanded form of *S. inconstans*, sp. n., but is of much more slender build, and may be at once recognised by the simple elytral pubescence, by the less approximate eyes, and by the yellow margin of the elytra being interrupted at the apex. Like *S. inconstans* it bears a close superficial resemblance to certain Australian forms, e.g. *S. Macleayi*, Champ. and *S. punctum*, Macl.

Ananca nigrimembris, sp. n.

Clear luteous with the maxillary palpi (antennae wanting), tibiae, tarsi, and apices of the femora black.

Head not withdrawn as far as the eyes in the prothorax, not constricted behind the eyes, rather strongly punctate but with very feeble pubescence; eyes large, moderately prominent, broadly but feebly emarginate in front, slightly wider apart than the antennal bases; mandibles bifid at apex, maxillary palpi slender, last joint about twice as long as the preceding, outer and apical edges scarcely diverging, inner edge very short. Thorax longer than wide, scarcely wider than the head across the eyes, sides strongly sinuate, base feebly bisinuate with raised border, disc depressed with a median shallow impression before the base and a pair in front of the middle, surface rather strongly punctate, with weak forwardly directed pubescence. Elytra elongate, parallel, more opaque than the thorax with four raised lines, pubescence stronger than that of thorax, golden. Posterior tarsi slender, penultimate joint scarcely wider than the preceding, both, and the apex of the basal joint, with dense golden pubescence beneath; claws simple.

Length.—9 mm.

Locality.—Nyasaland: Mlanje, 16th November 1912 (S. A. Neave).

The single specimen, sex not determined, is distinct from every other African species known to me by its black appendages in contrast with the yellow body. It may prove to be synonymous with *S. bicoloripes*, Pic (1922) from San Thomé, which is described as being similarly coloured, but the description is too meagre for definite recognition, and in view of the wide difference in the localities, and of the apparent distinctness of the South and East African forms from the West African, the probability appears to be in favour of their being distinct.

Ananca hottentota, Fairm.

Bull. Soc. Ent. France, p. 71, 1883.

Elongate, brownish testaceous, the antennae with the apical half of joints 3–7 (the rest wanting) fuscous, 2nd joint ⅓ as long as the 3rd; thorax clouded with fuscous at the sides.

Head comparatively coarsely punctate and finely rather sparsely pubescent; eyes widely but shallowly emarginate, mandibles bifid at apex, last joint of palpi triangular, inner side as long as apex. Thorax subcordiform, widely depressed above, with the usual depressions rather feeble, sides rather strongly constricted about the middle; surface rather coarsely and sparsely but somewhat irregularly punctate, with fine sparse pubescence. Elytra 3 times as long as together wide, a little darker than the thorax, and much more finely and densely punctate, all 4 raised lines evident. (Legs defective.)

Length.—13 mm.

Locality.—Mossel Bay, January 1899 (T. W. Overbeek), in South African Museum. (Described from the Cape.)

I have not seen any authentic individual of this species, but Dr. Péringuey informs me that he thinks the defective ♀ above described is of the same species as that he had originally sent to Fairmaire. It agrees fairly well with the description given by the latter author, but is a little longer. The annulate antennae are very striking and at once distinguish the species from the other African representatives of the family.

Since the above was written I have received a further pair of *A. hottentota* from Tokai, Cape Province, 10th October 1923 (N. L. King) from under the bark of eucalyptus trees grown from seed.

From these it is possible to supplement the above description: Femora mainly fulvous with the apex as well as the tibiae and tarsi darker.

Sexes, even as regards antennae, palpi, position of eyes, etc., very similar, but strongly dimorphic in the genitalia.

♂, 5th ventral segment broadly emarginate at apex, but the median portion again triangularly produced, 6th segment divided almost to base to form a pair of narrow divergent lobes the apices of which are twisted (*i.e.* dorsal surface becomes ventral) and curve towards one another again. Between these is the aedeagus, the lateral lobes narrow, lanceolate, the median lobe provided on its dorsal side near the apex with two barbs, of which the apical is the larger.

♀, 5th ventral segment subtriangular, the apex not quite reaching that of the pygidium.

This strong sexual dimorphism in the genital armature is very unusual in *Ananca*, and suggests that the genus may be composite (see above under *Ananca*). While there is some resemblance between the ♂ genitalia here described, and those of *A. helvola* Kl. and *A. foveicollis* Fairm. described by Fairmaire, there is no suggestion of an intimate relationship, since Fairmaire describes only 4 ventral segments to the abdomen.

The habitat under the bark of Eucalyptus, in conjunction with other previously noted resemblances of South African to Australian and New Zealand species, suggests an inquiry whether it, or its ancestors, might not have been imported with the eucalyptus, but it is certainly not assignable to any Australian species known to me, while the fact that it was described from South Africa forty years ago and was again taken in 1899 does not afford any valid support to such a theory.

Ananca holoxantha, Har.

Col. Heft., vol. xvi, p. 143, 1879.

Brownish testaceous, densely and finely punctate and pubescent throughout.

Head retractile to the eyes in the prothorax; eyes feebly convex and feebly emarginate in front; 2nd joint of antennae nearly ½ as long as the 3rd; mandibles bifid at apex; last joint of maxillary palpi triangular, inner side nearly as long as the apex. Thorax cordiform, rounded in front, the sides gradually convergent behind, disc convex, with scarcely indicated depressions, closely and finely punctate. Elytra not 3 times as long as together wide, slightly darker than the head and thorax, with the suture narrowly paler; the usual raised lines are scarcely indicated. Tarsi slender, basal joint of posterior tarsi as long as the rest together, penultimate joint small, cordiform scarcely wider than the preceding, claw-joint projecting for ¾ of its length beyond it: claws simple.

♂ not identified.

♀ pygidium deeply cleft or bilobed at apex.

Length.—10 mm.

Locality.—Walfish Bay.

Loanda (type of von Harold).

It is with a little doubt that I assign two individuals to this species. They agree fairly well with von Harold's description, except that the

2nd joint of the antennae is evidently more than ⅓ as long as the 3rd, the elytra are not wider behind the middle, and have faint indications of the usual raised lines. Both specimens appear to be of the same sex, one of them being obviously ♀.

Ananca subfasciata, sp. n.

Pale dirty yellow with an indistinct broad dark band across the base of the elytra and another beyond the middle.

Head wider than the prothorax, slightly narrowed behind the eyes, rather short in front. Eyes large, prominent, widely but shallowly emarginate in front, distance between them rather greater than that between antennal bases. Antennae inserted close to eyes, filiform, 2nd joint about half as long as 3rd; labrum transverse, mandibles strongly curved externally, bifid at apex; maxillary palpi slender, last joint about twice as long as 2nd, outer and apical sides curved, inner very short, giving the joint a subcrescentic outline. Thorax as wide as long, strongly sinuately narrowed towards base, rounded in front, disc with a broad shallow depression across the anterior half and produced basally as a median depression, very finely and not closely punctate and pubescent. Elytra more densely and strongly pubescent than the thorax, each with 4 raised lines, the 3rd (humeral) only visible near the base. Tarsi slender, 1st joint of posterior tarsi longer than the rest together including the claws, penultimate not markedly wider than the preceding, densely pubescent beneath. ♂ pygidium slightly emarginate at apex.

Length.—6–7 mm.

Localities.—Clanwilliam, O'Okiep, November 1885 (South African Museum).

A very fragile insect, the soft teguments and indistinct colour pattern giving it the appearance of immaturity, though both the individuals before me are alike. The short head and peculiar shape of the terminal joint of the palpi are very distinct, and in conjunction with the small size and feeble coloration should render the species easily recognisable. The form of the palpi does not appear to be sexual; in both specimens they are similar, though the second, in which however the genital armature is not visible, has the pygidium entire at the apex, and is presumably ♀.

Ananca fusciventris, sp. n.

Flavous, the elytra notably paler than the head and thorax, the metasternum and abdomen fuscous.

Head retractile to the eyes in the prothorax, rather strongly but not very densely punctate and pubescent; eyes large, moderately convex, feebly emarginate in front, somewhat more approximate than the antennal bases. Antennae slender, inserted close to the eyes, 2nd joint rather more than $\frac{1}{3}$ as long as 3rd; mandibles toothed beneath at apex, curved in about a quarter circle from the front of the clypeus; maxillary palpi slender, last joint half as long again as the penultimate, the inner side about as long as the apical. Thorax longer than wide, scarcely as wide as the head across the eyes, with the usual impressions very feeble; surface more sparsely punctate than the head, punctures large, shallow, more or less pupillate, the intervening space finely alutaceous. Elytra with the usual raised lines ill-defined, rather sparsely punctate, each puncture with a rather long suberect hair. Anterior tibiae bispinose, tarsi moderately stout, basal joint of posterior tarsi as long as the rest together (excluding the claws) penultimate joint cordiform, wider than the preceding. ♂ not identified. ♀ pygidium rather long, subtriangular, entire at apex.

Length.—10 mm.

Localities.—Beira, Port. E. Africa, 1st June 1900 (G. A. K. Marshall); Cape District (?) (South African Museum).

Readily recognised among the African members of the family by its colour and its comparatively sparse and coarse pubescence. It is closely allied to *Ananca scabripennis*, Champ. (1917) from the Seychelle Islands and Christmas Island, with which the peculiar puncturation of the thorax agrees, but the elytra are more sparsely punctate with longer pubescence, and the colour of the underside is different.

Sessinia Pascoe.

In this genus are retained only those species in which the mandibles are simple at the apex, though in some cases there is a blunt tooth on the upper edge of the inner side a little before the apex. In *Ananca* the outer edge bears a deep groove, frequently visible only from beneath, a little before the apex which ultimately splits it into two sharp teeth, the upper usually the larger. Fairmaire seems to have paid no attention to this character, and it is probable that many of the species included by him in *Ananca* should really be referred here. The two genera are in other respects almost identical and have a similar distribution throughout the tropics of both hemispheres.

Though this character may appear trivial it appears to be sharply defined (in a family where good characters are scarce), and considerable importance has been attached to it by most recent writers on the Oedemeridae.

Champion (1917) has recently used *Oxacis,* Lec. for this genus, treating *Sessinia* as a *nomen nudum* synonymous with *Ananca,* F. and G., but I am unable to follow him in so doing. The name was proposed by Pascoe (1863) for a group of known species for which generic characters, though no name, were given by Lacordaire (1859), and appears to be perfectly valid. The first of these species quoted by Lacordaire, *Lagria livida,* F., later selected by Semenow (1894) as the type of the genus, has simple mandibles, so that *Sessinia* Pasc. may be separated from *Ananca* Fairm., with which it was formerly combined and synonymous, on these grounds, and *Oxacis* Lec., at least as applied to the African fauna, becomes a synonym of it.

Key to the South African species of Sessinia.

1. (2) Thorax without median dark vitta ; elytra with a pale spot on suture *clarimacula,* sp. n.
2. (1) Thorax with median dark vitta.
3. (4) Eyes separated by a distance notably less than the length of the 3rd joint of the antennae ; size larger (12 mm.) . *vittatithorax,* sp. n.
4. (3) Eyes separated by a distance as great as (♂) or greater than (♀) the length of 3rd joint of antennae ; size smaller (8–10 mm.) *marshalli,* sp. n.

Sessinia clarimacula, sp. n.

Moderately robust, fusco-testaceous, the elytra a little darker than the head and thorax with an elongate suffused pale spot on the suture just before the middle.

Head sunk not quite to the eyes in the prothorax, not constricted behind them, finely and moderately densely punctate and pubescent ; eyes large, feebly convex and widely but shallowly emarginate in front ; antennae inserted close to the eyes, but slightly less approximate to one another than the latter, not attaining the posterior femora (♀, those of ♂ defective), 2nd joint half as long as the 3rd, 4th to 11th (♀) subequal, a little shorter than the 3rd ; mandibles simple at apex, very elongate and comparatively feebly curved at tip, giving the head a very elongate triangular outline ; maxillary palpi slender, last joint as long as the second and slightly longer than the third, its internal side not very divergent from the external, about as long as the apical. Thorax little wider than the head across the eyes, slightly longer than wide, rather suddenly narrowed about the middle and again constricted just before the base, with a pair of feeble depressions in the anterior half and a median one before the base ; disc punctured and pubescent as the head, the pubescence directed mainly obliquely inwards and forwards from the sides and forwards in the middle. Elytra rather densely rugosely punctate, with dense semi-decumbent brownish pubescence turning to golden on the sutural flavous spot ; the usual four raised lines are scarcely perceptible and the suture is not markedly thickened or raised. Anterior tibiae with two spurs ; tarsi rather stout, first joint of posterior tarsi as long as the rest together (excluding the claws), penultimate joint bilobed and deeply and broadly excavate above, scarcely wider than the preceding, the pile-like pubescence of the underside divided into two areas. ♂ scarcely differing externally from the ♀, elytra rather dark and the sutural spot consequently more evident (? always), the pygidium sharply notched at apex (entire in ♀, and projecting a little beyond the elytra).

Length.—13–15 mm.

Locality.—Walfish Bay. 2 ♂♂, 2 ♀♀ in South African Museum.

This insect resembles in colour and pubescence that which I take to be *A. holoxantha*, Har. The latter, however, is very much smaller, has the mandibles bifid at apex and more strongly curved, the 2nd joint of the antennae only $\frac{1}{3}$ as long as the 3rd ; the tarsi more slender, and the ♀ has the apex of the pygidium widely and deeply notched at the apex.

Sessinia vittatithorax, sp. n.

Robust, flavotestaceous, with the head between the eyes, a median line along the thorax, and the elytra brownish, the latter with the suture and lateral margins flavous.

Head retractile to the eyes in the prothorax, finely, rather closely punctate, with indistinct pubescence. Eyes large, rather strongly convex, separated above by a space about equal to the breadth of one of them, feebly emarginate in front. Antennae filiform, nearly as long as the body, inserted close to the eyes and less approximate than these, 2nd joint $\frac{1}{3}$ as long as 3rd. Mandibles acute at apex, but each with a blunt tooth on the upper side a little before it. Maxillary palpi slender, last joint not very much larger than the third, its inner edge rather longer than the apical. Prothorax subcordate, rounded in front, base raised, disc with scarcely evident impressions, subnitid, with rather large shallow punctures not very dense near the middle and anteriorly, but becoming finer and denser towards the base, the intervening space distinctly alutaceous. Elytra widest at the shoulders, thence very gradually narrowed for $\frac{2}{3}$ of their length, moderately finely and densely punctate and pubescent. Anterior tibiae bispinose, tarsi not very stout, basal joint of posterior tarsi as long as the rest together (excluding the claws), penultimate joint cordate, about $\frac{2}{3}$ of the claw joint projecting beyond it; claws simple. Sex not determined (probably ♂), pygidium triangular, projecting slightly beyond the elytra.

Length.—12 mm.

Locality.—Natal, Isipingo, February 1896 (G. A. K. Marshall).

The single specimen has the facies of a large group of species widely distributed in the tropics and closely resembling one another, though differing widely in the minute sculpture of the thorax. It must be very similar to *Ananca strigicollis*, Fairm. from Madagascar, but has no trace of a median sulcus on the thorax and is not darker beneath. It also resembles *A. grisescens*, Fairm. but is darker in colour, with quite different thoracic sculpture and mandibular structure. *Oxacis inquisitor*, Blkb., an Australian species, has very similar sculpture and coloration, but differs in the palpi, the inner side of the last joint being distinctly shorter than the apical.

Sessinia marshalli, sp. n.

Pale flavous, with the head between the eyes, a median line on the thorax, and the elytra, except the margins, clouded with fuscous.

Head retractile to the eyes in the prothorax, finely and rather sparsely punctate and pubescent; eyes large, prominent, feebly emarginate in front, separated above by a space greater than the width of one of them; antennae inserted close to the eyes, $\frac{2}{3}$ to $\frac{3}{4}$ as long as the body, 2nd joint about $\frac{1}{3}$ as long as 3rd; mandibles acute at apex; maxillary palpi normal, last joint about half as long again as the 3rd; inner side as long as apical. Thorax as long as or longer than wide, subcordiform, without pronounced impressions, sparsely and finely punctate and pubescent, the general surface smooth and nitid. Elytra more densely asperately punctate with stronger decumbent pubescence, without evident raised lines; apex of pygidium rounded, entire. Anterior tibiae bispinose, tarsi slender, basal joint of posterior tarsi as long as the rest together (excluding the claws), penultimate joint cordate, a little wider than the preceding.

♂ slightly smaller than the ♀, more slender, the thorax longer than wide, scarcely as wide as the head across the eyes (as wide as long in the ♀ and slightly wider than the head across the eyes) antennae longer, extending beyond the middle of the elytra.

Length.—8–10 mm.

Localities.—Natal, Isipingo, February 1896 (G. A. K. Marshall); Port Shepstone, January 1913 (K. Barnard); Pondoland, Port St John, March to May and December 1923 (R. E. Turner).

Very like a small pale-coloured form of the preceding, but the distance between the eyes is greater, and the thorax is very differently sculptured.

Ananca phthysica, Rits. from the Congo and *Sessinia lateritincta,* Pic from the Gaboon (if these are not identical) probably should also be included in this genus. The British Museum possesses specimens from Nigeria with the name *Nacerdes limbata,* Dej. (MS.), that appear to agree with the description of both. Of the same general form as *S. vittatithorax,* sp. n. they differ in having a broad though rather indistinct fuscous streak from the humerus nearly to the tip of the elytra but not including the margin. The thorax is very indistinctly darker in the middle, the anteromedian portion of the disc densely and rather coarsely punctured with a tendency to a median line free of punctures, but basally and laterally the punctures become much finer and more crowded.

Asclerosibutia, Pic.

L'Echange, vol. xxx, p. 67, 1914.

This genus, with three species from West Africa and the Congo, has not hitherto been recognised from the southern or eastern part of the African continent. It is placed by Pic near *Asclera,* but the author makes no mention of the palpi or of the abdominal sexual characters. If I have recognised it correctly it belongs to the subfamily of Oedemerinae, and not to the Asclerinae, as witnessed by the long narrow terminal joint of the palpi, the comparatively deep, angular, emargination of the eye, and the strong sexual dimorphism exhibited by the abdominal segments. It is perhaps scarcely distinct from the tropical American genus *Sisenes,* Champ., but the name may provisionally be retained for the African species. These appear to fall into two, or perhaps three, distinct groups according to the formation of the abdominal segments.

(i) *Asclerosibutia,* Pic s.s. (type *A. diversithorax,* Pic, det. ex descr.).

♂♀ in British Museum, 150–200 miles W. of Kambove, 3500–4500 ft., 17th October 1907 (S. A. Neave).

♂. 5th ventral segment strongly bisinuate at apex, massive, not tapering behind, exposing the two large rounded lobes of the 6th segment, held in a subtectiform position, between the upper edges of which are visible the downward curved tips of the median and tegminal lobes of the aedeagus. The massive nature of the apparatus, while somewhat similar to that of *Nacerdes melanura,* is, without dissection, distinctly suggestive of the genital armature of the Australian Rhynchophorous genus *Psalidura.*

♀. 5th ventral segment widely emarginate at apex with a small projection in the middle of the emargination ; the 6th ventral sclerite divided and more or less retractile beneath the 5th, leaving the apex of the ovipositor broadly exposed as it lies in the hollow of the pygidium.

(*A. lineatocollis,* Pic and v. *rufipennis,* n. are similar.)

(ii) *Idgiomima* subgen. nov. (type *A. neavei,* sp. n.).

♂ unknown.

(*N.B.*—The ♂ of *A. violacea,* sp. n. which appears to be closely related to *A. neavei* has armature very similar to the above.)

♀. 5th ventral segment very obtusely angulate at apex, almost concealing the ovipositor when in resting position ; 6th sclerite divided as above.

(Includes also *A. marshalli, A. abdominalis* and probably *A. violacea,* of which the ♀ is unknown.)

(iii) Subgen. *Idgiomimula,* n. type *A. terminalis,* sp. n.

♂. 5th ventral segment conical, broadly, subrectangularly emarginate at apex so as to reach only half the length of the pygidium, exposing the two comparatively small rounded lobes of the 6th segment, which lie in a horizontal plane and nearly meet posteriorly. Between and beyond them is visible the aedeagus which extends, in the position of rest, to the tip of the pygidium.

♀. 5th ventral segment triangular, extending nearly to the tips of the pygidium ; 6th sclerite divided, completely concealed when at rest.

To the first group belong apparently all the species described by Pic. They are larger, more robust-looking insects than those of the other groups, with the elytra more densely pubescent and having a striped appearance owing to the different directions in which the pubescence lies. The suture and outer margin are thickened, and there are two raised costae—one dorsal, arising from above the humeral angle, and one sublateral, arising below it. On all these raised lines the pubescence lies directly backwards. Between the suture and the dorsal costa it is directed obliquely backwards, outwards from the suture, inwards from the costa, the two series forming a crest midway between the two; between the two costae it forms a similar crest. In the ♀ the last joint or two joints of the antennae are yellowish, but in the only ♂ seen by me they are concolorous black.

In the second group the two costae though present are much less prominent and do not influence the trend of the pubescence. This lies backwards along the suture, then obliquely outwards to a line halfway between the dorsal and sublateral costae, beyond which it lies again backwards. I have seen no ♂ of the South East African species of this group, but *A. violacea*, sp. n. from West Africa is presumed to belong to it.

The third group is necessary for *A. terminalis*, sp. n. which agrees in facies and also in the way in which the pubescence lies with the second, but exhibits certain differences in the posterior abdominal segments in both sexes which seem to separate it rather sharply. It is possible, however, that the discovery of the ♂ of *A. neavei* and its allies may render this distinction less abrupt.

From Uganda the British Museum possesses what is probably a variety of one of the West African species described by Pic:—

A. lineatocollis, Pic var. *rufipennis*, nov.

Black, the thorax and elytra rufous, the former broadly blackish on the sides, the last two joints of the antennae fulvous. The head between the antennal bases obscurely rufous, with pubescence that in certain lights is also rufous.

Locality.—Uganda, Tero Forest, S. E. Buddu; 3800 ft., 26th to 30th September 1911 (S. A. Neave).

Except that it lacks the black apex to the elytra this form appears to be identical with a specimen from Aburi, Gold Coast, that agrees with the description of *A. lineatocollis*, Pic.

Key to the species of Asclerosibutia *Pic.*

1. (8) Elytral pubescence lying obliquely in alternating directions in longitudinal bands, giving the elytra a striped appearance; last joint of antennae usually yellow (♀).
2. (7) Elytra yellow with apex black (West Africa).
3. (4) Thorax uniformly fuscous . . . . . . *diversicollis*, Pic
4. (3) Thorax yellow with sides fuscous.
5. (6) Basal joints of antennae reddish . . . . . *gabonica*, Pic
6. (5) Basal joints of antennae black . . . . . . *lineatocollis*, Pic
7. (2) Elytra entirely yellow (Uganda) . . . . var. *rufipennis*, n.

8. (1) Elytral pubescence directed obliquely outwards on dorsal area, not giving a banded appearance, last joint of antennae black (♀).
9. (10) Upper surface entirely dark violaceous (West Africa) . *violacea*, sp. n.
10. (9) Upper surface more or less fulvous (Nyasaland, etc.).
11. (14) Abdomen beneath entirely black or dark.
12. (13) Thorax fulvous with median black vitta ; apical half of elytra and underside blue-black . . . . *neavei*, sp. n.
13. (12) Thorax entirely fulvous ; apical half of elytra black . *marshalli*, sp. n.
14. (11) Abdomen beneath largely yellow.
15. (16) Black, with prothorax, most of elytra and first four segments of abdomen yellow . . . . *abdominalis*, sp. n.
16. (15) Yellow, with head, apex and outer margin of elytra, tip of abdomen and tibiae and tarsi of intermediate and posterior legs black *terminalis*, sp. n.

A. (*Idgiomima*) *neavei*, sp. n.

♀. Head and appendages black, thorax rufofulvous with a broad median black vitta, elytra flavotestaceous in basal half, violaceous black in apical half, metasternum and abdomen beneath violaceous black, dorsum of abdomen brilliant violet.

Head and thorax finely rather sparsely punctate and pubescent, pubescence of elytra mainly nearly decumbent but with a few erect stiffer bristles ; on the inside of a line from the humerus to midway across the disc near the apex it is directed obliquely backwards and outwards, and is golden on the anterior half, more cinereous posteriorly; external to this line it is black and directed backwards, thus forming an indistinct crest where it meets the dorsal pubescence.

Length.—9 mm.

Locality.—Nyasaland, Mlanje, 1st to 6th December 1912–1913 (S. A. Neave).

Very distinct in the violet tint of the dark portion of the elytra and of the underside. In this and in the cinereous colour of the pubescence of the dorsal area of the elytra it resembles the West African form *A. violacea*, described below.

A. (*Idgiomima*) *marshalli*, sp. n.

Black, with the prothorax, scutellum, and basal half of the elytra fulvous ; pubescence the same colour as the derm it covers.

Length.—8–9 mm.

Locality.—Mashonaland, Chirinda, December 1901 (G. A. K. Marshall).

Very similar to *N. neavei*, but lacking the dark vitta on the thorax, the violet tints of the black of the elytra and underside, and the cinereous pubescence on the elytra. *Nacerda latenigra*, Pic, from Benguela, is described as very similarly coloured.

A. (*Idgiomima*) *abdominalis*, sp. n.

Black, with the prothorax, scutellum, elytra except near the tips, and the first four segments of the abdomen yellow.

Length.—8 mm.

Locality.—Nyasaland, Mlanje, 11th December 1912 (S. A. Neave).

A single specimen from the same locality as *N. neavei*, but besides the difference in colour the thorax is much less strongly cordiform, with the dorsal impressions less pronounced.

A. (*Idgiomimula*) *terminalis*, sp. n.

Flavotestaceous, with the head and antennae, the apex and outer margins of the elytra, the intermediate and posterior tibiae and tarsi and the apex of the abdomen black.

♂. Pygidium triangular, projecting considerably beyond the 5th ventral segment; apex entire; the 5th ventral segment tapering and rather deeply angularly emarginate at the apex; the genital armature so far as visible without dissection of the single ♂ is described above. The 4th, 5th, and apex of 3rd abdominal segments black.

♀. Pygidium triangular, not projecting much beyond the 5th ventral segment; the apex only of the latter with black margin.

Length.—7 mm.

Locality.—Nyasaland, Mlanje, December 1912 (S. A. Neave).

Very similar to the preceding, but besides the difference in colour is of a slighter build with narrower prothorax.

The following West African species appears to be closely related to *A. neavi*, from which it differs in its uniformly violaceous colouring.

A. (*Idgiomima ?*) *violacea*, sp. n.

Slender, dark violaceous above, with the basal joints of the antennae beneath, the maxillary and labial palpi testaceous; under side and legs piceous with violaceous reflections, clothed with silvery pubescence, pubescence of upper side blackish, except for a broad dorsal patch occupying about the median half of the dorsal area of the elytra, and the scutellum silvery.

Head across the eyes nearly as wide as the elytra, wider than the prothorax, moderately strongly and densely punctate. Antennae slender, 2nd joint nearly half as long as 3rd (apical joints wanting). Thorax longer than wide, scarcely wider in front or narrowed behind, with a pair of moderately deep depressions about the middle, distinctly more finely and sparsely punctate than the head. Elytra densely and strongly punctate, broadest across the shoulders, but nearly parallel behind them. Anterior tibiae bispinose, basal joint of posterior tarsi about as long as the rest together including the claws, but the whole tarsus only about ⅔ as long as the tibiae; penultimate joint not much wider than the preceding, all joints except the claw joint with dense flavous pubescence beneath; claws bifid at apex.

♂. 5th ventral segment of abdomen massive, as long as the two preceding together, strongly impressed in the middle; 6th segment visible as two large broadly rounded lobes.

♀. Unknown.

Length.—7–8 mm.

Localities.—Sierra Leone, Old Calabar.

The facies is that of the *Idgiomima* group rather than of the hitherto described species of *Asclerosibutia*, though the genital characters of the ♂ are very similar to those of *A. diversithorax*, Pic. Until the ♀ is known its position must remain more or less doubtful.

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* The more important references only are given here, as well as those to papers of later date than Schenkling's Catalogue. Full references will be found in that work.

6. *The Dolichopodidae of the South African Museum.*—By C. H. Curran, Ottawa, Canada.

(With Plates IX and X.)

The preparation of the manuscript describing the two-winged flies of the family *Dolichopodidae*, contained in the collection of the South African Museum, was entrusted to the author by the late Dr. Péringuey. It has been a great pleasure to examine this second collection of beautiful small flies from South Africa, to redescribe several of the species and to add several new ones to the list, and my appreciation of the late Director's kindness is very great. Including the species herein described as new, there are now about two score recognised from South Africa. Undoubtedly there are still many times this number to be found.

The *Dolichopodidae* are interesting because of their beautiful coloration, unexpected development of various appendages, and also because of the slight knowledge we have of their life-history. They are often found in large numbers about the edges of pools and streams, performing their interesting mating evolutions, wherein the males display their often remarkable sexual developments before the females. Most of the species will be found crawling about upon the mud, or even upon the surface of the water, but a few are found almost entirely upon foliage at not too great a distance from moisture. A few inhabit the seashore, while others are found upon moist sand, and one or two genera upon the trunks of trees. Most of them are found almost entirely in bright sunny patches while a few prefer the shade. Small moist clearings in woods are favourite haunts of many of them. Usually several species, and various genera, may be found together.

The classification of the family is generally rather simple where males are concerned, but the females cause much more difficulty. The specialisation of the male secondary sexual characters has been greatly used in separating the genera, as well as the primary separation upon the large or small genitalia. As the females invariably lack ornamentation they have been sadly neglected, and the only way to become familiar with the species is to collect and study both sexes together. This necessitates the collection of large numbers of specimens of each species. As it is very often impossible to distinguish two species in the field, such a practice frequently results in a pleasant surprise when the material is examined, as one may find that two or more species have been taken where only one was suspected.

In the following descriptions I have used the terminology of the legs, wherein I consider that all the legs are spread out at right angles to the body. Thus, the anterior surface of a leg is always the same, the posterior also the same. In this way confusion resulting from calling the anterior surface of the front leg the inner surface while the posterior surface of the hind leg is also termed the inner surface is avoided. For convenience I have also termed the whole back of the head the occiput, as I see no reason for restricting the term to the region lying between the vertex and the neck. The other terms used are those generally employed by students of the family, and generally accepted by dipterologists. In general I have followed the descriptions of Loew more or less as to style, and the terminology is very much the same; I know of no one who has prepared finer descriptions and see no reason to change the general terminology he used, except in one or two cases where the meaning was not clear.

It is hoped that the following treatment may prove simple enough to enable those unfamiliar with the group to determine their specimens correctly, and that it may thus prove an incentive to a more intensive study of the family to some one on the ground who has the time to collect exhaustively. There are still a few species described by Loew, which I have not seen, and these are naturally not included in the keys. In addition, several species described in a recently published paper on "The *Dolichopodidae* of South Africa," in the Annals of the Transvaal Museum (vol. x, pt. 4, 1924), are not included in the present work. As these belong to genera in which only one species is known from South Africa and they are not represented in the collection, the descriptions or keys to the species do not appear. Owing to the fact that the collections have been so small, it does not appear desirable to monograph the family until a great deal more is known about them, as such a monograph would prove very inadequate within a few years.

The types of all the species described in this paper are deposited in the South African Museum unless otherwise stated, but in every case paratypes, at least, will be found there. Where the descriptions are made from two or more specimens of a sex, paratypes are retained in the collection of the author.

SYNOPSIS OF THE SOUTH AFRICAN GENERA.

In many cases it is very difficult to place the females of the *Dolichopodidae* in their proper genera, and because of this fact almost all keys are based entirely upon the males, which offer very fine characters. There are, however, characters available for the separation of the females in most cases, and where they do not occur it would be well to consider such inseparable groups as a single genus. Except in the case of *Diaphorus* and *Chrysotus* there need be no question about the identity of females. I hesitate to unite the genera without further study, as it is possible that some character is available and may be discovered by close examination of a large number of species, which will make the retention of the two generic names possible.

There may be some difficulty in using the following key unless one is careful to make absolutely certain that a character is present or absent. Some of the characters I have been forced to use in order to bring the sexes out together are not very conspicuous. A magnification of at least twenty times should be used; this enlargement is sufficient for ordinary identification. Unfortunately, many specimens are always sure to be in poor condition, and in such cases a character is very liable to be overlooked. Attention is also called to the possibility of genera not heretofore reported from South Africa being collected, in which case the synopsis will prove unsatisfactory; on the other hand aberrant forms of a genus may not trace out.

1. Fourth vein with a widely divergent fork beyond the posterior cross-vein, the angle usually emitting a stump of vein towards the posterior wing margin or the last section of the fourth vein forms a cross-vein; thorax rather squarish (cf. *Vaalimyia* n. gen. *See* figs. 1 to 5) 2
   Fourth vein without a widely divergent fork, though often with a strong curvature forward; thorax not squarish in any known South African genus, but rectangular; (in *Vaalimyia*, fig. 6) there are three sections of the fourth vein beyond the posterior cross-vein, one rectangular . . . 6

2. Second and third longitudinal veins almost touching each other along their whole length, and clearly united for a distance before joining the costa; genitalia extended behind the abdomen which is rather strongly arcuate when viewed from the side . . . . . *Sciopolina* Curran
   Second and third veins distinctly separated for their whole length; genitalia hidden, drooping, or extended forward under the abdomen . . . 3

3. Arista apical . . . . *Chrysosoma* Guer.
   Arista dorsal (often appearing almost apical) 4

4. Scutellum with four large bristles . . . . *Condylostylus* Bigot
   Scutellum with two bristles 5

5. Front hollowed out, saddle-shaped, the ocellar triangle slightly raised (*Sciopus*, not original spelling) . . . . *Sciapus* Zeller

Front scarcely concave, only slightly lowered below the upper level of the eyes. (Probably not South African.) . . . . *Leptorhetum* Aldrich

6. Anterior femora with spines beneath . . . . *Hydrophorus* Fallen

Anterior femora not with spines, often with long bristles . . . 7

7. Mesopleura produced as a thumb-like strip along the posterior edge of the anterior coxae . . . . *Liancalus* Loew

Mesopleura normal, not produced as described 8

8. A distinctly concave area before the scutellum usually covering nearly the posterior third of the mesonotum 9

Mesonotum convex behind, at most a more or less evident transverse depression before the scutellum 11

9. Arista inserted on a deep notch in the end of the third antennal joint; face wide, concave above, the lower portion projecting rather roof-like above the palpi . . . . *Aphrosylus* Walker

Arista dorsal or subapical; face often more or less concave above, due to contraction 10

10. Male genitalia pendulous, extending forward to near the base of the abdomen; abdomen of female rather flattened; always dark coloured, not bright metallic flies . . . . *Medetera* Fischer

Male genitalia not pendulous, short, not reaching forward; abdomen elongate, more or less cylindrical or laterally compressed; metallic or yellowish species . . . . *Neurigona* Rondani

11. First antennal joint with hairs above 12

First antennal joint bare above 15

12. The fourth longitudinal vein is broken at a right angle beyond the posterior cross-vein (fig. 6) . . . . *Vaalimyia* gen. nov.

The fourth longitudinal vein is not broken at a right angle, but may be strongly curved 13

13. Face narrowest at upper third or fourth, quite strongly widened below, and reaching nearly or quite to the lower edge of the eyes *Tachytrechus* Walker

Face with parallel sides or narrowest below, usually quite evidently shorter and seldom reaching to the lowest level of the eyes 14

14. Arista short plumose; face reaching as a triangle almost to the lowest level of the eyes . . . . *Pelastoneurus* Loew

Arista at most short pubescent, not plumose; face of female not nearly reaching the lowest level of the eyes . . . . . . *Hercostomus* Loew

15. The costa extends only to or slightly beyond the tip of the third vein *Asyndetus* Loew

The costa reaches to the fourth vein or a little beyond 16

16. Anterior tarsi without claws, the pulvilli much enlarged . *Diaphorus* Mg. s.s.

Anterior tarsi with claws 17

17. Apex of the abdomen with four stout bristles; pulvilli usually enlarged on front legs. (Sub-gen. *Lyroneurus* Loew) . . . . *Diaphorus* Mg.

Apex of abdomen not with unusually strong bristles 18

18. Arista inserted in a deep emargination of the third antennal joint slightly above the middle of the apex; abdomen flattened; rather greyish species *Aphrosylus* Walker
    Arista not inserted in a deep emargination near apex of the third antennal joint; abdomen variable 19
19. The last section of the fourth vein approaches the third very strongly beyond its middle and then runs parallel with it to end in the costa close to it *Tenuopus* Curran
    The last section of the fourth vein is never more than moderately bent forward 20
20. Face narrowest at upper third, widened below 21
    Face with parallel sides or narrowest below (allowance must be made for contraction in some cases) 22
21. Species over 5 mm.; filaments of genitalia reach base of abdomen *Thinophilus* Wahl.
    Species under 3 mm., the genitalia are hidden or very small . . . 23
22. Arista dorsal 24
    Arista apical or nearly so 25
23. Arista distinctly dorsal; abdomen of male with six segments *Sympycnus* Loew
    Arista subapical; abdomen of male with five segments *Chrysotus* Meigen
24. Second two abdominal segments yellow with the narrow apices green, or with an additional narrow median vitta . . . . *Diaphorus* Meigen
    These two segments differently marked, never so extensively yellow; abdomen more or less cylindrical and more elongate . . *Sympycnus* Loew
25. The females of *Chrysotus* and *Diaphorus* will usually trace out here. I know of no definite separation except association with the males at time of capture.

Note.—It is often possible to tell whether a female belongs to a genus in which the genitalia of the male are pendulous by the presence of one to several fine hairs in the cavity above the anterior edge of the hind coxae, but this character is not always reliable. There are a few other genera which also possess these hairs, and some of those with pendulous genitalia lack them. Some species may be placed in their genera by the presence of only one bristle on the outer surface of the hind coxa. It must be remembered that these characters are not stable within a genus, but they may be of assistance where males and females taken at the same time are difficult to associate.

Chrysosoma Guer.

Of the four described species recorded from South Africa three are represented in the collection.

Synopsis of Species.

1. Cilia of the squamae white . . . . *flexum* Loew
   Cilia of the squama black or brown, one or two hairs may be white . 2
2. Front tibiae black or brown 3
   Front tibiae yellow, the middle ones similar in colour . . *munroi* Curran
3. Knobs of halteres yellow . . . . . . *ernestum* Curran
   Knobs of halteres black . . . . . . *auratum* Curran

Chrysosoma auratum Curran.

Curran, Ann. Transv. Mus., vol. x, pt. 4, p. 217, pl. vi, fig. 2, 1924.

Length, 4·5 mm. *Male.*—Face wide above; only half as wide at the lower edge as at the antennae, retreating; shining green, the sides bronzed. Front brilliant green, the small lateral upper triangles bronzed. Antennae black, the third joint brown pubescent, short, subconical; arista slender, equal in length to the thorax. Palpi small, black, with fine white hairs and two black apical bristles; proboscis red. Occiput black, greyish pollinose, the beard white. The lower section of the face bears some fine white pubescence.

Mesonotum and upper portion of the pleura in front metallic green, merging to blue behind, the pleura blackish, with a green reflection and thinly greyish-white pollinose. There is a slight indication of a bronze vitta on the anterior fourth of the mesonotum inside the humeri and a little white pollen on either side of the middle line on the anterior slopes. Acrosticals on anterior half only, rather strong.

Legs black, the femora with a greenish tinge, the tarsi brownish black. Femora below with a row of sparse white cilia on both the anterior and posterior surface, those on the hind femora longest; anterior and posterior femora with a row of ciliate hairs on the postero-dorsal surface, the hind ones also with a row of shorter black hairs on the antero-dorsal surface. Tibiae simple, with normal bristles. First joint of the anterior tarsi about three-fourths as long as the second, its apical third and the following joint with the tarsal pad composed of brownish hairs which are at least half as long as the width of the joints, otherwise simple.

Wings cinereous hyaline, venation normal. Squamae brown, with black fringe; halteres brown.

Abdomen blue, the last two segments green, all the incisures blackish, the inner portion of the first segment purplish, the sides of each segment more or less bronzed. Hair on the sides of the abdomen long, black; also partly black on the disc, but there is shorter and finer hair on this part which is very evidently golden yellow in some views. Genitalia small, black, with short, semi-lunulate black outer lamellae which bear black hairs.

Female.—Pollen of face a little more reddish brown; front very wide. The knobs of the halteres are reddish. Tibiae wholly brown. Length, 3 mm.

One male and female have the proboscis brown and this male is smaller, only 3·5 mm. The brown tibiae distinguishes the female from *munroi*, while the brownish pollinose face distinguishes both sexes from *pernigrum* Beck.

There is a male specimen in the collection collected by Mr. R. W. E. Tucker at Kaapmuiden, Transvaal, 30th October 1918, agreeing perfectly with the type, and ♂♀, Nyaka, Port. E. Africa, February 1924, collected by Mr. R. F. Lawrence.

Chrysosoma munroi Curran.

Curran, Ann. Transv. Mus., vol. x, pt. 4, p. 218, pl. vi, fig. 3, 1924.

Length, 3·5 to 4 mm. *Male.*—Face bright green, more bluish in the middle above, rather thinly covered with snow-white pollen to just above the antennae ; lower portion of the face distinctly separated, subcordate. Front bright green, the small upper lateral angles brassy, the black hairs restricted to these small angles. Antennae small, black ; third joint cordate ; arista as long as the thorax, slightly thickened basally. Occiput opaque, black on upper part, white pollinose below. Palpi black, with fine white hairs, in front with two prominent black bristles ; proboscis brownish.

Mesonotum brassy green ; pleura green, with a covering of thin white pollen, only blackish in ground colour about the wing root. On the disc of the mesonotum is a pair of moderately wide bronze-brassy vittae, situated on the anterior half and separated from each other by the middle line. Acrosticals fairly large.

Legs black, the anterior four tibiae dirty yellowish. First joint of the anterior tarsi nearly three times as long as the second ; legs otherwise simple.

Wings cinereous hyaline ; venation normal. Squamae and halteres brown, the former black ciliate.

Abdomen bright green, the basal half of the segments somewhat bronzed, the incisures blackish. Pile and hairs black. Genitalia small, the outer lamellae extremely long, slender, blackish, their hairs blackish ; inner lamellae long, almost straight.

Female.—The face is slightly wider below, its sides more evenly converging, the lower part broader and less distinctly cut off ; knobs of halteres yellow ; otherwise agreeing in all respects.

This species is represented by eight specimens from the following localities : 2♂ 3♀, M'fongosi, Zululand (W. E. Jones) ; ♀, Tsumeb, S. W. Africa, December 1919 (R. W. Tucker) ; ♂♀, Masiene, Port. E. Africa, December 1923 (R. F. Lawrence).

Chrysosoma flexum Loew.

A beautiful large species, readily recognised by the characters shown in figs. 10, 10*a*, and 10*b*.

Length, 7·5 mm. *Male.*—Head green, not polished; lower portion of face and lower third or less of upper portion, except large sublateral projections downwards, densely greyish yellow pollinose; antennal region with brownish pollen except a yellow triangular spot immediately above and between the antennae. Face and front wide. Beard whitish. Proboscis reddish, with blackish base. Palpi reddish, with some fine whitish hairs and three long black bristles. Antennae black; first two joints metallic green above; third joint with a reddish triangle on basal half below, the joint triangular longer than wide; arista about as long as the head and thorax together.

Mesonotum green, not polished, more or less bluish violaceous in the middle and on the scutellum, which is evenly gently convex and bears two long black bristles. Pleura and coxae grey pollinose, the former chiefly green.

Coxae black, with white hair and black bristles; front coxa with two bristles. Legs reddish; trochanters and basal sixth of femora black. Anterior and posterior tarsi black, the middle ones with the apices of the first to third joints and the remaining joints black, the first joint with a broad basal and preapical whitish band, brownish yellow between, the bases of the two following joints yellow (fig. 10*b*). Anterior femora with appressed black hairs above, elsewhere with long white hairs which are longer than the width of the femur and decrease in length to the apical fourth where they disappear; middle and hind femora with a row of long, fine cilia below, which decrease as on the front legs, mostly black, but several of the basal ones pale. Anterior tibiae with three short bristles; middle ones with three dorsal bristles—one at the basal fourth, shorter than the thickness of the tibia, one at the basal third, one-and-one-half as long as thickness of the tibia, and one at the apical third about four times as long as tibial thickness, and a stouter much shorter bristle behind it on the postero-ventral surface. The middle basitarsi bear three long slender bristles as shown in the figure, and their pile is black except on the upper side of the fifth tarsal segment where it is white. Legs otherwise with normal black hair.

Wings as in fig. 10, their markings deep brown. Squamae yellow, with black border and yellowish cilia. Halteres rather dull ferruginous.

Abdomen bright green, the incisures narrowly black, the sides broadly bronzed, becoming black below, these colours covering all the apical segment. Genitalia (fig. 10*a*) black, with black hairs except behind the slender arms of the outer lamellae, where the pile is yellowish.

Described from a single ♂, Nyaka, Port. E. Africa, February 1924, collected by Mr. R. F. Lawrence.

C. senegalense has six or seven bristles on the middle tarsi, lacks the white bands and has noticeably different genitalia.

Sciapus Zeller.

Of this genus there are three species in the collection, one from Uganda undescribed. The forms occurring in South Africa, including the East African species, in the collection may be separated as follows :—

1. Thorax and abdomen reddish yellow, the latter with narrow, dark segmental apices . . . . *peringueyi* n. sp.
Thorax and abdomen metallic, green or bluish 2
2. Femora black ; wings chiefly blackish (Uganda) . . *subfascipennis* n. sp.
Femora yellow ; wings without black markings 3
3. Posterior femora with a row of long black bristles below *flavirostris* Loew
Posterior femora not black ciliate below . . . *trochanteralis* Curran

Sciapus peringueyi n. sp.

(Figs. 1, 1*a*, 1*b*.)

A rather large yellowish species, the apices of the abdominal segments narrowly black ; genital lamellae very long and filamentous.

Length, 7 to 7·5 mm. *Male.*—Head metallic green in ground colour, covered everywhere with dense greyish and greyish-yellow pollen, the face more argenteous, but the front has two longitudinal metallic violaceous-blue, sub-triangular, bare spots which may be confluent on the middle line. Face moderately wide, narrowed to the lower edge. Occipital cilia not numerous, brownish or black, short, limited to the upper edge of the head, the hair on the back of the head yellowish. Palpi rather large, twice as long as wide, elongate oval, with rather abundant long hair, especially on the apex and inner margin. Antennae reddish orange, the third joint darker except basally, subtriangular in shape, about as long as wide ; arista brown, slender, about as long as the face (fig. 1*b*).

Thorax yellowish, the mesonotum rusty yellowish, with a metallic violaceous reflection, sometimes with a more violet, incomplete, obscure median vitta; the pleura with a small, sub-triangular black spot beneath the root of the wings. Scutellum mostly violaceous, with a more greenish apex, but the lower margin and under side are yellowish. Pleura pale pollinose.

Legs yellowish, the apical tarsal joints becoming fuscous; simple, without unusual hairs or bristles. Coxae all pale, with yellowish hair and bristles. Hair of the legs black.

Wings tinged with yellowish, the venation as in fig. 1. Squamae and halteres yellowish, the former with a narrow brown margin and yellowish cilia.

Abdomen rusty yellowish, elongate, slightly tapering, the apex of each segment except the first bronze-black, the last segment almost wholly bronzed except the sides. Venter wholly pale. Genitalia yellow, shaped as in fig. 1*a*, the long outer lamellae brownish except on the basal fifth, the inner lamellae wholly pale. Hairs of the abdomen black, yellow on the sides and venter.

Female.—Differs chiefly sexually. The second, third, and fourth abdominal segments have narrower dark apices, the remainder of the abdomen pale. Fifth segment as long as the two preceding together, subconical in shape; the genitalia bear four short, stout, obtuse spines, the dorsal pair longer than the outer ones.

Type male, Cape Town, 1913; type female, same locality, both collected by Dr. Péringuey. Two male paratypes from Cape Town were collected in January 1912, by Mr. Lightfoot.

This species is evidently related to *S. unicolor* Becker from East Africa, but it is smaller, the thorax is shining and the front is not "metallic black." *S. adumbratus* Becker, from Egypt, is also a pale-coloured species but it has the front "grey pollinose." Probably the genitalia are quite different.

Sciapus subfascipennis n. sp.

(Fig. 2, Wing.)

Wings blackish, with the hind margin and a fascia beyond the middle almost hyaline.

Length, 5·5 mm. *Female.*—Face wide, gradually widened above, rather bright green with purplish reflections on the middle portion, brownish-ochreous pollinose, but thinly so on the upper section, especially in the middle. Front metallic, almost black below, becoming green above, not pollinose. Occiput green, thinly greyish pollinose and white pilose, except above. Palpi black, brownish pollinose, black haired ; proboscis brownish red. Antennae brownish red, the first joint blackish ; second joint with a long bristle above and two or three short ones below. Arista slender, black, longer than head width.

Mesonotum blue-green, evenly thinly greyish pollinose, the sides almost black ; scutellum blue, convex, with two black bristles. Pleura green, grey pollinose.

Coxae greenish, grey pollinose, the front ones yellowish pilose, with several black bristles, the others bearing only black hair. Femora shining black ; the anterior ones with a row of yellowish cilia on the postero-ventral surface, the middle ones with shorter, black cilia on the same surface but a few of the basal hairs are pale. Hair of the legs elsewhere black. Anterior four tibiae, basal four-fifths of the middle basitarsus, and first two joints of the front tarsi, yellowish ; the hind tibiae, their tarsi wholly, and the joints of the front tarsi not described as yellowish, black. Posterior tibiae with six or seven long black bristles above and about the same number of short, weak ones below. First joint of anterior tarsi twice as long as the last four joints combined, of the middle and hind tarsi one-and-one-half times as long as the remaining joints. Middle basitarsus with six or seven conspicuous short bristles below.

Wings blackish, with pale markings and venation as shown in fig. 2. Squamae black, with black cilia. Halteres fuscous reddish.

Abdomen blue, with some greenish reflections, the narrow base and apex of each segment blackish ; the whole thinly greyish pollinose, the hairs and bristles black ; genitalia furcate, destitute of spines.

Described from a female collected by Mr. R. Dummer at Mulange, Uganda, in November 1922.

Sciapus flavirostris Loew.

Length, ♂, 5 mm. ; ♀, 4 mm. *Male.*—Face rather wide, its upper section transverse, gently convex, only slightly more prominent above, bright blue, the upper part yellowish pollinose, the lower portion more thickly white pollinose. Front green, merging into blue below, without pollen. Occiput bluish, clothed with dense greyish-yellow pollen ; beard white. Antennae brown, the small third joint subcordate, its slender arista almost as long as the thorax, inserted near the upper margin. Palpi and proboscis yellow, with yellow hairs, the palpi each with two black bristles.

Mesonotum bright green, the posterior third and the scutellum usually violaceous; pleura green, covered with dense, greyish-white pollen, a violaceous spot beneath the squamae, which, together with the halteres, are yellow, the former white ciliate.

Anterior coxae and all the legs yellow, the former with a small black basal spot on the outer side, their white hair moderately long, fairly coarse and rather abundant, and three somewhat stronger hairs are evident on the apical half towards the outer margin; posterior four coxae black and green, with greyish pollen and whitish hair. Posterior four tarsi deep brown from the apex of the first joint, the front ones gradually becoming brownish. Beneath each femur is a row of black cilia composed of moderately long slender black bristles, those on the hind femora the longest; the anterior four femora also have a fringe of whitish hairs on the antero-ventral edge but these hairs are much shorter than the cilia, the hairs elsewhere on the legs appressed, black. Front tibiae with a row of short slender black bristles on the posterior edge and an unusually long slender hair on the apical third of this surface. The first joint of all the tarsi is as long as the remaining joints combined.

Wings cinereous hyaline; posterior cross-vein oblique.

First abdominal segment violaceous, second blue, their sides and the following segments green, but the bases of the following segments are increasingly more widely black, this colour expanding as lateral triangles, which, on the penultimate segment, occupy its whole length; dorsum thinly greyish pollinose in some lights, the hairs and bristles black, the broad sides at the base, however, with whitish hairs. Genitalia blackish, somewhat bronzed, the inner lamellae brown, the outer yellow, slightly tapering to their somewhat widened end, clothed with pale hair, but the ventral and apical bristles black.

Female.—Head as in the male, the face green. Thorax wholly green, the scutellum blue; apical cross-vein less oblique. Trochanters yellow, the anterior coxae with three prominent bristles and short white hair. Tarsal lengths similar; abdomen green.

In the collection are the following:—♂, Inhambane, Port. E. Africa, January 1924; ♂ 3♀, Nyaka, Port. E. Africa, February 1924, all collected by Mr. R. F. Lawrence.

Condylostylus Bigot.

Four species belonging to this genus are represented in the collection and may be separated as follows:—

1.	Anterior coxae greenish or blackish	*angustipennis* Loew
	Anterior coxae practically wholly yellowish	2

2. Cilia of the squamae pale 3
Cilia of the squamae black . . . . *sicatrix* n. sp.
3. Posterior femora black or brown on at least the apical fifth 4
Posterior femora with only a narrow apical blackish spot (*imitator* Curr., non Becker) (♀ only) . . . . *imitans* n. name
4. Female (Uganda) . . . . *pateraeformis* Becker
Males 5
5. Posterior cross-vein situated proximad of the apex of the second longitudinal vein (Uganda) . . . . *pateraeformis* Becker
Posterior cross-vein well beyond apex of second vein: (*imitator* Curr., non Becker) . . . . *imitans* n. name

Condylostylus sicatrix n. sp.

(Figs. 3, 3*a*.)

Readily distinguished from all described species by the peculiar, elongate, cicatrix-like blackish area on the anterior surface of the hind tibia near the base.

Length, 4·5 mm. *Male.*—Face wide, bulbous above, strongly narrowed to lower edge, brilliant blue-green, the lower part white pollinose. Front wide, blue or blue-green. Occiput whitish-grey pollinose, fine white pilose below, bright green in ground colour. Palpi and proboscis reddish yellow, the former sometimes darker and black haired. Antennae black, the third joint subcordate, more brownish; second joint with numerous long black bristles; arista dorsal, slender, longer than the head width.

Thorax greenish blue to green, the pleura whitish pollinose. Anterior coxae reddish yellow, the others brown, with pale tips, all whitish pollinose and with white hairs, those on the front ones not abundant but long. Legs reddish yellow, the anterior four tarsi brownish from the tip of the first joint, the apical fourth of the hind tibiae and their tarsi wholly black and adorned with a cicatrix as described previously (fig. 3*a*). Anterior femora with a row of sparse, longish hairs below, the middle ones with a row on the basal half and some black ones on the posterior apical half, the hind ones with a row of stouter black ones on the postero-ventral surface. Legs with black hairs; tibiae not with distinctive bristling. Anterior tarsi simple; middle basitarsus as long as remaining joints, beset beneath with conspicuous short spines and with a strong, subapical ventral spine; above on the apical three-fourths there is a narrow thickly short pilose ridge and the apex is produced lappet-like over the second segment. The tarsi are otherwise normal with rather conspicuous hair.

Wings tinged with grey which fades out posteriorly. Squamae yellow, with black fringe. Halteres pale yellow, with fuscous base.

Abdomen green, the bases of the segments broadly blackish, each segment becoming successively more bronzed, passing from brassy at the base to almost purple on the last segment which is very brilliant. Each segment bears a posterior row of long black bristles, the hairs black ; first segment largely, the venter wholly, white pilose. Genitalia bronze-black, shaped as in fig. 3, the lamellae brownish or yellowish brown with black hairs.

Type, male, Matroosberg, Ceres Div., November 1917, and three males from the same locality, January 1917, all collected by Mr. Lightfoot.

Condylostylus angustipennis Loew.

(Fig. 4.)

Legs black ; front four tibiae and bases of their tarsi yellowish in the female.

Length, 5 mm. *Male.*—Face wide, strongly narrowed below, bright green, the lower part thickly, the sides and middle less thickly or scarcely silvery-greyish pollinose. Front brilliant green, the occiput of the same colour but thinly greyish pollinose, the lower half white pilose. Palpi black, with long black hairs ; proboscis reddish brown. Antennae black, the second joint with abundant long bristly hairs, the third truncately elongate-oval, the dorsal black arista slender and longer than the head width (fig. 4).

Thorax bright green, the mesonotum, except the sides, bluish or purplish, the scutellum similar, with four strong marginal and one or two pairs of discal bristles. Pleura greyish pollinose.

Coxae and legs blackish, the coxae, femora and part of the tibiae somewhat greenish, the former grey pollinose and whitish pilose. Middle femora with rather long black cilia on the antero- and postero-ventral surfaces, the hind ones with similar cilia on the antero-ventral edge, the front four with long black hairs behind, the front ones with some long, pale hairs on the basal half below. Tibiae with black hairs rather longer than usual, the middle ones with a long, black, preapical dorsal bristle, but not otherwise distinctively ornamented. Middle basitarsi with rather conspicuous hairs which make them appear widened, and beneath on each edge with an outwardly directed row of stout spinules, the anterior row longer, and on the apical half the upper half of the joint is greatly compressed, as though crushed.

Wings smoky brownish, paler behind and apically. Large cross-vein oblique, its anterior end less than the length of the cross-vein from the angle of the fourth vein. Squamae and halteres blackish, the former black ciliate.

Abdomen bronze-coloured, the base more green, the base of each segment broadly blackish. Genitalia black, but somewhat bronzed towards the base, the appendages and hairs black. The abdominal venter bears long, bristly hairs and those on the dorsum are longer than usual.

Female.—Face with the sides evenly converging below and the pollen yellowish. Front with a rather thin brownish-yellow covering of pollen; hairs of the antennae shorter, the third joint as broad as long, its apex obtusely rounded. The mesonotum is conspicuously brownish-yellow pollinose. Legs simple. Abdomen with conspicuous greyish pollen. Knobs of halteres yellow. Ovipositor with six scale-shaped bristles.

A male and female from Kar Kloof, Natal, June 1915, collected by Mr. H. W. Bell-Marley. This is the first record since the species was described.

Condylostylus imitans n. n.

C. imitator Curran, Ann. Transv. Mus., vol. x, pt. 4, p. 221, 1924, non Becker.

Male readily distinguished by wing venation (fig. 9). Female wings almost as in fig. 5*a* (*C. pateraeformis* Beck.), but the hind femora are only very narrowly black apically.

Length, ♂, 6 mm., ♀, 5 mm. *Male.*—Face quite narrow, somewhat widened on upper fourth, silvery-white pollinose to well above the antennae. Front polished blue or dark green; vertex green with whitish pollen; occiput black, grey pollinose, on upper fourth with a row of very short black bristles; beard not long, white. Face entirely without pile. Proboscis brownish; palpi black, with black hairs and perhaps more or less silvery pollinose. Antennae black; third joint rounded at apex, the arista rising at its basal third, shorter than the head height, thickened only at the base.

Mesonotum bright green, whitish pollinose in front; notopleura, pleura and coxae, silvery-grey pollinose; sides of dorsum opaque black between suture and wing-root. Scutellum evenly gently convex; with four strong bristles.

Anterior legs, including the coxae, yellow, the anterior basitarsi very much widened, more or less concave beneath, basally along the posterior margin with three short bristles among the dense woolly hair below and in front with a row of short, downwardly directed marginal bristles along the whole length (none of these show in fig. 9*b*, which is a dorsal view) anterior tarsi brown, the basal joint brownish yellow ; middle femora usually broadly brown above except on base, sometimes wholly brown or only brownish on upper apical half (tenerals) ; middle tibiae yellow or brownish yellow, their tarsi wholly blackish. Posterior legs wholly brownish or black except about the basal half of the femora, but sometimes wholly brown or with about two-thirds yellowish. Coxae pale haired, their bristles black, the anterior pair with three bristles on each. All the femora with a row of fine white hairs on either side below, these as long as more than half the femoral width. Hairs of legs elsewhere black and short. Middle tarsi with the apical two joints conspicuously widened, the third gradually so, all three with rather longish stout black hairs behind.

Wings as in fig. 9, the clouds brown. Squamae with brown border and pale cilia. Halteres yellow.

Abdomen green, the narrow apices and increasingly wide bases of the segments dull bronzed, apically becoming purplish bronzed, the terminal one or two segments usually wholly of this colour. Genitalia (fig. 9*a*) black. Hairs and bristles of the abdomen and genitalia black.

Female.—(Original description *C. imitator*). " Length, 5 mm. *Female.*—Front brilliant green, face narrow, silvery-white pollinose. Antennae black, the third joint with evident yellowish pubescence, cordate, the dorsal arista slender, not quite as long as the thorax. Occiput white pollinose ; beard white. Palpi black, with a fringe of sparse, rather long white hairs on the lower edge ; proboscis black.

" Legs, including the front coxae and all the trochanters, yellow, the tarsi, except the basal three-fourths of the anterior four basitarsi, brown or black. Middle tibiae with one sub-basal black bristle on the antero-dorsal surface and two apical spines.

" Wings hyaline, with a brown cloud as shown in fig. 7 (almost as in fig. 5*a* of the present paper).

" Abdomen bronze-green, varying from brassy to cupreous in certain lights, the apical segments brilliant bluish, the incisures blackish or dark bronze ; hair black.

" Described from a single female from Kandahar, January 27, 1918 (Fause)."

There are in the collection : 2♂, Nyaka, Port. E. Africa, February 1924 ; ♂, 2♀, Masiene, Port. E. Africa, December 1923 ; ♂♀, Inhambane, Port. E. Africa, January 1924, all collected by Mr. R. F. Lawrence.

Condylostylus pateraeformis Becker.

(Figs. 5, 5*a*.)

Syn : *Condylostylus alter* Beck. Ent. Mitt., vol. xii, p. 39, 1923.

Readily distinguished in the male by the peculiar wing venation (fig. 5), shape of genitalia and middle tarsi ; the female is quite different, the wings being marked by two black costally connected fasciae, the legs paler, etc.

Length, 5 to 6 mm. *Male.*—Face narrow, with nearly parallel sides on the lower half, moderately, gradually broadened above, argenteous white pollinose. Front rather narrow, brilliant dark blue. Occiput green, greyish pollinose, the beard white. Palpi small, black, black haired ; proboscis reddish brown. Antennae black, the third joint but little larger than the second which has only the usual dorsal and ventral bristles ; arista black, slender, but little longer than the face.

Mesonotum bright blue, often more or less brassy green in front where there is also a broad band of whitish pollen. Pleura greyish white pollinose. Scutellum with more or less violaceous reflection.

Anterior coxae yellow, with narrow brown base, the others brownish with pale apices, greyish pollinose and with fine white pile, the anterior ones with several black bristles. Femora, hind legs wholly, and all the tarsi, black ; the bases and apices of the femora, more or less, and the anterior four tibiae, yellowish, although the middle tibiae may be brownish yellow and are always broadly brown or blackish on the apex. Front legs missing. Femora without unusually long hairs beneath, although the fine, pale hairs are almost as long as the width of the femora. Middle tibiae slightly swollen on the middle portion and also at the apex, their tarsi with the last three joints strongly broadened and with black marginal hair. Hind legs simple.

Wings hyaline, with black markings and venation as shown in fig. 5. Squamae and halteres black, the former with just the corners brown and bearing white cilia.

Abdomen blue, the apical segment bronzed, the broad bases and sides of the segment blackish bronze and subopaque on the immediate base. Genitalia black, the outer lamellae brown, with brownish hairs. Abdomen with black hairs and bristles.

Female.—This sex was described by Becker as a distinct species, but he suspected that it was the female of *pateraeformis*, which is undoubtedly the case. Face about twice as wide as in the male, but still narrow for a female, more or less greenish above. Wings as in fig. 5*a*, the markings blackish. Femora and front four tibiae reddish yellow, the hind femora broadly black on the apex; base of anterior four tarsi paler than the apical joints. Legs simple. Abdomen differing only sexually.

There are 8 females and 1 male from Mulange, Uganda, collected in November 1922 by Mr. R. Dummer. These specimens are from the type locality (Uganda). In his description of the female Becker included South African and Ugandan material, but it appears probable that the South African specimens represent the species I have described as *C. imitator* (see *imitans* above). Should Becker have selected his type from the South African specimens his *C. alter* would be a good species, but this seems unlikely, and it will be impossible to definitely decide the status of these species until the types are compared. Becker's description and figure agree with the females described above much better than with *imitans*.

Hercostomus Loew.

There are representatives of four species of *Hercostomus* in the collection, two of them new to science.

Table of Species.

Males.

1. Anterior tarsi with the two subapical joints greatly enlarged, the apical one slightly so and white in colour; abdomen partly luteous . . . *perturbus* Curran
   Anterior tarsi plain or practically so 2
2. Apical joint of front tarsi whitish and white pilose; hind tarsi wholly black from middle of first joint . . . . . . *nectarophagus* Curran *
   Front tarsi black from apex of first joint; apical three joints of hind tarsi argenteous in front . . . . *argyropus* Loew

Females.

1. Abdomen either with pale fasciae or lateral yellow spots on the second and usually the third segments 2
   Abdomen greenish, at most the venter yellow 3
2. Base of abdomen luteous, except the apices of the second and third segments *perturbus* Curran
   Second and usually the third segment with yellow, rounded, lateral triangles *nectarophagus* Curran
3. Posterior tibiae with well differentiated black or brown apex *argyropus* Loew
   Posterior tibiae without blackish apex, if darker than the base the infuscation is extremely gradual and slight 4
4. Posterior coxae wholly pale; antennae almost all black . . *eronis* n. sp.
   Posterior coxae brown on outer side; first two antennal joints reddish yellow *disjectus* n. sp.

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* Rev. Zool. Afric., vol. xii, p. 470, 1924.

Hercostomus perturbus Curran.

Curran, Ann. Transv. Mus., vol. x, pt. 4, p. 225, pl. vii, figs. 10*a*, 10*b*, 1924.

Length, 4·25 mm. *Male.*—Face very narrow below, six times as wide at the antennae, silvery white. Front silvery white in some views, only the ocellar area brownish. Occiput blackish green, with some reddish-brown pollen. Antennae brownish, the last two joints missing. Palpi small, white; proboscis reddish yellow.

Mesonotum rather dark olive-greenish black, with moderately thin greyish-brown pollen; prothorax entirely, the humeri, the border of all the pleural sclerites, the coxae and the legs, yellowish, the pleural sclerites greenish black, but densely whitish or greyish pollinose, so that the ground colour is largely obscured. Scutellum dark green, its apex only slightly convex, its two large bristles black.

Coxae with black hairs. Middle and hind tibiae each with three antero-dorsal and two dorsal black bristles. Front tarsi brown, the last joint yellow, the first two joints subequal in length, the following joints much compressed and widened, almost straight on the lower edge, the upper edge strongly convex, widest just beyond the middle of the fourth joint, the fifth joint but little widened; the dorsal fringe of hairs is conspicuously white on the apical third of the fourth and whole of the fifth joints, elsewhere black. Middle tarsi brown from the apex of the first joint, the posterior ones wholly so. First joint of the posterior tarsi distinctly shorter than the second.

Wings slightly tinged with brownish, the fourth vein rather strongly approaching the third. Squamae and halteres yellow, the former black ciliate.

First three segments of the abdomen brownish red, the fourth with a lateral spot of the same colour, the apices of the second and third and the whole of the remaining segments shining blackish, with some evident brownish-red pollen, especially noticeable laterally. The short hairs are rather tawny, the usual short bristles black. The first two sections of the genitalia are brownish, the remainder yellow. The outer genital lamellae are moderately small, fringed with dense whitish or yellowish hair.

Female.—The face is wider and the usual concavity is present. The front is shining not silvery-white pollinose, but rather purplish; third antennal joint as wide as long, the apex rounded. Legs simple, reddish yellow, the femora brownish at apex above, the posterior tarsi wholly, the last two or three joints of the remaining tarsi pale brownish.

A female from East London, collected by Mr. Lightfoot, in the collection; a second specimen with the abdomen less extensively pale from Barberton, collected by Mr. Munro. The male was from Pretoria.

Hercostomus argyropus Loew.

Length, 5 to 5·5 mm. *Male.*—Face narrow, silvery white. Front blue, thinly yellow pollinose. Occiput black, covered with dense greyish pollen. Antennae yellow; third joint black, longer than wide, subcordate, its upper edge beyond the insertion of the arista concave so that it is rather pointed at the apex; arista dorsal, brown. Palpi reddish, with white pollen and fine white hairs; proboscis reddish.

Mesonotum olivaceous, with a steel-blue reflection in some lights, the olive-brown pollen moderately dense, forming obscure vittae in some lights; the sides before the wings are greyish pollinose. Pleura blackish green with slight bronze reflections, densely covered with greyish pollen. Scutellum deep blue-green, with several small, black discal hairs and thinly covered with tawny pollen.

Legs pale yellowish, the middle coxae brown except apically and inwardly, the anterior coxae with pale hairs and black bristles. Apices of the posterior four tibiae and all the tarsi from the apex of the first joint brown, the front ones somewhat paler, the posterior basitarsi over half brown, the middle ones slightly swollen and almost white at their immediate base, the tips of the anterior four tarsal joints slightly darkened at their apices so as to form annules in some lights. Last joint of the middle tarsi rather reddish, the posterior tarsi with the apical three joints slightly compressed and with their anterior surface silvery white, the first joint of the hind tarsi slightly shorter than the second.

Wings tinged with brownish. Squamae and halteres yellow, the former black ciliate.

Abdomen dark green or bronzed, the sides rather densely greyish pollinose. Genitalia blackish or brown, that portion lying next to the body and the appendages yellow, the remainder thinly greyish pollinose. Lamellae small, crescent shaped, fringed with black hairs.

Female.—Face much wider, concave above, silvery pollinose; front less shining. Legs simple, without the silvery surfaces.

There is a single female in the collection from Oudebosch, Caledon Div. (K. H. Barnard), December 1920.

Hercostomus eronis n. sp.

Allied to *argyropus* Lw., but the antennae are almost wholly black, the first joint being obscurely reddish beneath, and the legs are differently coloured.

Length, 4·5 mm. *Female.*—Face moderately wide, argenteous pollinose. Front with dense, similar pollen. Occiput almost black, greyish pollinose, white pilose below. Palpi and proboscis orange yellow, with black hairs, the latter somewhat tinged with brownish on the margins. Antennae black, the first joint obscurely reddish below, black haired above. Arista black, with short, black pubescence.

Mesonotum bronze black, with conspicuous covering of brownish pollen. Pleura pale greyish pollinose.

Coxae yellowish, the middle ones with a pale brownish stripe on the outer side, their hairs and bristles all black. Legs yellowish, the hind tarsi brownish from the base, the others from the apex of the first joint, the posterior femora slightly brown at the apex above.

Wings faintly brownish, the fourth vein rather strongly approaching the third. Squamae and halteres yellow, the former black ciliate.

Abdomen dark green, becoming more or less bronzed towards the apex, the sides thinly greyish pollinose. Ovipositor with two narrow, scale-like spines. Hairs of abdomen practically all black.

Described from a single female collected at Oudebosch, Caledon Div., 10th December 1920, by Mr. R. M. Lightfoot.

Hercostomus disjectus n. sp.

A single specimen in rather poor condition is sufficiently well characterised to warrant description. The head is largely covered with some gummy substance.

Length, 4 mm. *Female.*—First two antennal joints reddish, with black hairs. Front argenteous pollinose, the face probably similar. Mesonotum damaged. Pleura and coxae greyish pollinose.

Anterior coxae reddish yellow, the others blackish, with pale inner surfaces and apices, and all clothed with short, bristly hairs and longer black bristles. Legs reddish yellow, the tarsi all with the basal joint pale except on the apex, the remaining joints brownish, the hind femora slightly darker on apex above.

Wings light brownish. Squamae and halteres yellow, the former black ciliate.

Abdomen green with bronze reflections, greyish pollinose except the segmental bases and middle line ; black haired. Genitalia retracted.

Female.—Ceres Division, Matroosberg, 3500 ft., January 1917, collected by Mr. R. M. Lightfoot.

VAALIMYIA new genus.

Allied to *Pelastoneurus* Lw. and *Hercostomus* Loew, both of which it resembles in having the wide concave face in both sexes, thinly short plumose arista, and the acrostical bristles in two rows. It differs from them in having the fourth longitudinal vein produced forward at a right angle at about half the distance between the large cross-vein and edge of the wing, as shown in fig. 6. Genotype: the following species.

Vaalimyia violacea new species.

(Figs. 6, 6*a*.)

Length, 3·5 mm. *Male.*—Face greyish pollinose, with a large violaceous triangle immediately below the antennae visible from certain angles, the upper two-thirds of the face depressed, the lower portion almost perpendicular, reaching in the middle almost to the lowest level of the eyes; face about one-fourth as wide as head width. Front wider than the face, brilliant purplish. Back of head green, ochreous pollinose above the neck, snow-white pollinose below, the orbital bristles yellow on the lower half, black above. Antennae dull orange, the third joint chiefly brown, the arista brown; first antennal joint with black hairs above, third joint shaped as in fig. 6*a*. Palpi small, reddish brown, with black hairs; proboscis of the same colour, thick, retractile.

Mesonotum and scutellum brilliant violet, the latter more metallic blue on the basal half, the former with the prescutellar depression bronze-gold pollinose; sides darker. Pleura blackish green, greyish pollinose; a single, strong black bristle above the anterior coxae.

Legs simple, reddish yellow, including the front coxae and apices and inner surfaces of the remaining ones. Posterior femora black above at apex, their tibiae with black apical band and their tarsi of the same colour. Anterior four tarsi brown from the tip of the first joint to the apex. Coxae and legs with black hairs and bristles, the former greyish pollinose. First joint of hind tarsi much longer than the second, the last three joints missing, but probably not ornamented.

Wings (fig. 6) tinged with brownish before the third vein and along all the veins. Halteres and squamae yellow, the latter black ciliate.

The abdomen is blackish green with darker incisures, the sides rather thickly greyish pollinose. Genitalia greenish black, greyish pollinose, large, reaching two-thirds the distance to the base of the abdomen, the outer lamellae broadly oval, with short, wide stem, orange in colour, with black border, short black hairs and long, black cilia on the margin.

Female.—Differs only sexually; the third antennal joint is much shorter, being only slightly longer than wide and much less pointed. The black spot above the apex of the hind femora is not conspicuous.

Described from two males and one female from Transvaal. Type ♂, Komati Poort. Type ♀, Kaapmuiden; paratype ♂, Acornhoek (R. W. E. Tucker); and one ♀ paratype, Nyaka, Port. E. Africa, February 1924, collected by Mr. R. F. Lawrence.

Tachytrechus Walker.

There are ten described species belonging to this genus recorded from Africa, four of which are found in South Africa. Of these only one species is represented in the collection.

Synopsis of Species.

1. Femora black on basal half; antennae black, except just the lower apex of the first joint . . . . *bracteatus* Wied.
   Femora reddish yellow, at most the narrow bases black 2
2. Antennae black . . . . *abscoenus* Wied.
   Antennae with the first two joints reddish yellow 3
3. Last section of the fourth vein practically straight . *alternatus* Curr.
   Last section of the fourth vein distinctly bent forward before the middle *capensis* Curr.

Tachytrechus capensis Curran.

Curran, Ann. Transv. Mus., vol. x, pt. 4, p. 223, pl. vii, fig. 10, 1924.

Length, 5·5 to 6 mm. *Female.*—Face shining brownish-yellow pollinose, its ground colour when visible green; front with similarly dense but less shining pollen. Occiput green with yellowish pollen above, silvery white pollen below. Antennae reddish, the third joint brown with a whitish reflection, subquadrate, its corners rounded, its base a little wider than its apex, the brown arista inserted about the middle of the upper surface of the joint. Palpi and proboscis brown with tiny black hairs, the former yellowish pollinose in some lights.

Mesonotum rather brownish pollinose, leaving a narrow olivaceous vitta on either side of the middle line, the middle line more bronzed in some lights; each bristle is inserted in a dark circle so that the colours contrast quite strongly in certain views; the posterior depression and a wide lateral presutural vitta are dark green with whitish or greyish pollen and the usual darker area is present above the wings. Pleura dull green, the middle part more or less cupreous, densely whitish-grey pollinose.

Coxae blackish green, densely whitish-grey pollinose, with black hairs and bristles. Legs reddish, the apices of the posterior four tibiae and their tarsi wholly brown, their basitarsi, except sometimes the hind ones, paler on the basal half or more ; front tarsi brownish red except the basal four-fifths of the basitarsi which are reddish. Middle femora with one upper and one lower anterior preapical bristle and one posterior one, the posterior femora with only one distinct preapical bristle in front, but with a row of three or four long bristles on the apical half of the upper surface.

Wings tinged with brown, the last section of the fourth vein decidedly curved forward before its middle. Squamae and halteres yellow, the former with black cilia.

Abdomen bright green or blue-green, the terminal segment brilliant blue, the apices of the segments rather broadly cupreous, the sides of the second segment similarly coloured ; the conspicuous whitish pollen is more dense on the sides and forms large triangles on the front of the segments.

Male.—Genitalia purplish or bluish, with greyish pollinose reflections. Outer lamellae blackish with thin brownish-yellow pollen, their hairs entirely black.

There are two males and three females collected by Mr. R. M. Lightfoot at East London, in November 1915 ; and one male, Nyaka, Port. E. Africa, February 1924, collected by Mr. Lawrence.

Medetera Fischer.

The species belonging to this genus are usually found on the trunks of trees, and are almost always dull in colour, as well as being rather small. Five species, separable by the following synopsis, are to be found in South Africa.

Synopsis of Species.

1. Lower section of the face argenteous pollinose, the face and front similarly clothed, the ground colour almost all hidden . . *normalis* Curran
   Lower section of the face not wholly argenteous, the middle broadly shining 2
2. Basal half of the anterior four and more than half of the posterior femora blackish . . . . *praedator* n. sp.
   Front four femora wholly pale, or but little darkened towards the base . 3
3. Pollen of the mesonotum rich brownish ; propleural bristles clear white . 4
   Pollen of the mesonotum greyish although the bronze ground colour gives the appearance of a brown tinge . . . . . *penura* n. sp.
4. Face dark green, the pollen not dense . . . . *longitarsis* Curran
   Face densely brown pollinose . . . . . *simplicis* Curran

Medetera praedator n. sp.

Length, 2 to 2·5 mm. *Male.*—Face brownish pollinose, the lower section shining black, often metallic bronzed. Front with similar pollen to that on the face but it is not so abundant above and is paler in colour laterally. Orbital cilia whitish, a few of the lower ones blackish. Palpi and proboscis shining black, the antennae black.

Mesonotum bronzed, thickly covered with greyish-brown pollen which leaves two conspicuous paler vittae separated by the acrostical bristles. Pleura concolorous with the dorsum, but less thickly and paler pollinose. Two or three black propleural bristles. Scutellum greyish pollinose, with four bristles, the outer pair small.

Legs reddish yellow, the femora in mature specimens black on slightly more than the basal half, but in teneral specimens there may be only a little black on each femur. The tarsi become black at the apex and the last joint is somewhat widened. Coxae black, the anterior ones with blackish hairs. Posterior basitarsi about one-third as long as the following joint.

Wings subhyaline, slightly tinged with fuscous yellow, especially in front. Halteres and squamae yellow, the latter white ciliate.

Abdomen and genitalia deep shining black, the inner lamellae brownish red, the small outer ones black ; hair all black.

Female.—Similar except sexually.

Described from fourteen specimens of both sexes from East London, 17th, 19th, and 21st February 1924, collected by Mr. H. K. Munro. The two types are returned to Mr. Munro : paratypes are in the South African Museum and in the author's collection.

Medetera penura n. sp.

Length, about 3 mm. *Male.*—Face moderately wide, grey-brown pollinose, the lower section shining black with the sides pollinose. Front with similar pollen to that on face. Orbital cilia white. Palpi greenish black, with metallic green reflection in some views ; proboscis and antennae black.

Thorax and scutellum tawny brown pollinose, the vittae of the mesonotum not distinct. Ground colour blackish green. Scutellum with four bristles, the lateral pair two-thirds as long as the apical. Normally there are two reddish bristles on the propleura.

Coxae blackish with a thin covering of tawny brown pollen, their hairs reddish or yellow, rarely appearing brown. Legs reddish, the hind femora black on the basal half, the middle ones sometimes slightly darkened basally. Tarsi darkened apically.

Wings cinereous hyaline, their base yellow. Squamae and halteres yellow, the former white ciliate.

Abdomen bronze-black, rather thickly covered with yellowish pollen. Genitalia shining black, the lamellae brown, the inner pair larger than the outer, bare, the outer ones with black hairs.

Female.—Differs only sexually.

Described from five specimens collected by Mr. H. K. Munro at East London on 17th and 21st February 1924. The type pair has been returned to Mr. Munro. A male is deposited in the South African Museum.

Medetera normalis Curran.

Curran, Ann. Transv. Mus., vol. x, pt. 4, p. 226, 1924.

Length, 3 mm. *Male.*—Head silvery pollinose, the ground colour bluish where at all evident. Antennae brown, the third joint with evident white pubescence; arista above the middle of the small cordate third joint, slender. Palpi shining black, with a few black hairs, the proboscis of the same colour.

Thorax green, rather densely covered with whitish-grey pollen, that bordering the posterior depression brownish yellow; the narrow middle line and a narrow vitta on either side bronze coloured in some lights. Scutellum rather flat, with four black bristles, the outer ones about half as long as the inner.

Coxae and femora blackish, the anterior coxae with coarse yellow or golden yellow pubescence. Broad apices of the femora and all the tibiae and tarsi reddish yellow, the latter scarcely darkened apically. First joint of the posterior tarsi one-third as long as the second, the third much longer than the first, the fourth almost as long as the first. The first joint of the anterior tarsi is slightly longer than the second. The hairs of the legs are very short and inconspicuous, except above the hind femora.

Wings hyaline; the fourth vein approaches the third, its last section straight, the tips of the two veins moderately separated; the distance between the third and fourth veins opposite the posterior cross-vein is equal to almost twice the length of the cross-vein, which is rectangularly placed. Squamae and halteres pale yellow, the former with white cilia.

Abdomen green, moderately covered with greyish-white pollen, the hair yellowish, that on the first segment black. Hypopygium shining black, its small apical appendages shining brownish red, the slender inner processes yellow; the basal parts ciliated with a little short yellow hair, the lamellae bare.

Female.—Differs only sexually.

In addition to the original specimens, I have seen over a dozen others collected by Mr. Munro at East London during February 1924. A pair of these are donated to the South African Museum.

Aphrosylus Walker.

This genus has not been previously recognised from South Africa, and is represented by a single species which is described below. It is possible that *A. griseatus,* described herewith, is the same as some European species, but in the absence of specimens from that region for comparison, it is considered advisable to describe it in order that others may be able definitely to associate South African specimens with something already named.

Aphrosylus griseatus n. sp.

(Figs. 7, 7*a*, 7*b*.)

Length, 2·75 to 3·25 mm. *Male.*—Head brownish in ground colour, the face and occiput very densely greyish pollinose, the front less thickly so, while the region of the neck is brownish pollinose. The cilia on the upper half of the occiput are black, on the lower half pale yellowish or almost white and fairly fine. Palpi reddish, with darker base, the proboscis with similarly coloured apex, both densely grey pollinose, the former with some fine black hairs. Eyes whitish or yellowish pilose. Antennae black, shaped as in fig. 7*b*. The face is concave on the upper portion, the lower section more or less roof-like above the palpi.

Thorax and abdomen brown, densely grey pollinose. The acrosticals are small and widely separated, arranged usually in pairs, each pair towards the caudal end successively closer to each other; they reach only to the middle of the thorax or a little beyond in most specimens and are often difficult to see. Posterior fourth of the mesonotum concave. Two hair-like yellow propleural bristles. Scutellum with four marginal bristles of almost equal size.

Coxae and legs with dense grey pollen, the coxae and femora brown, with pale apices, the tibiae and tarsi reddish, the latter with the terminal joint brown and somewhat broadened; the abundant pollen makes the colour of the legs very deceptive, and it is possible that the femora are largely pale apically; the posterior femora are bare on the median half of the posterior surface. The hair on the legs is short, erect or suberect, black. The first joint of the anterior tarsi is hardly as long as the four following joints, the middle ones have the first joint decidedly longer than the remaining, while on the hind legs the first two joints are subequal. Legs simple. The hind coxae bear a median bristle on the outer surface, the remaining coxae are sparsely clothed with black bristly hairs.

Wings (fig. 7) dull greyish brown, appearing as though they had been wet. Squamae and halteres yellow, the former finely yellow ciliate.

Outer genital lamellae leaf-like, elongate-oval, yellowish brown, grey pollinose; the inner lamellae, etc., shining brown. Abdomen with sparse black appressed hairs (fig. 7*a*).

Female.—Differs only sexually.

This description is from the following specimens collected by Mr. H. K. Munro on the Beach at East London: 7 ♂, 12 ♀, 17th February; 3 ♂ and 2 ♀, 14th February 1919.

Hydrophorus Fallen.

Distinguished from other genera by the presence of spines beneath the anterior femora, absence of mammiform process below the squamae, and by the posterior cross-vein being situated close to the wing margin. The following synopsis separates the two species contained in the collection :—

A. Upper portion of the face brilliant green . . . *spinicornis* Loew
AA. Face wholly greyish pollinose . . . . . *praecox* Lehm.

Hydrophorus spinicornis Loew.

Length, 2·5 to 3 mm. *Female.*—Face moderately wide, yet wider on the lower half, the upper portion brilliant green, still, very lightly greyish-yellow pollinose, the lower portion greyish pollinose laterally, yellowish in the middle. Front greyish-brown pollinose. Occiput grey pollinose, the beard whitish. Palpi of same colour as middle of face, with fine white hairs. Cheeks produced as a wide rim below the eyes. Antennae black, the third joint brown, subcordate, a little longer than wide ; arista long, the basal section longer than the third antennal joint.

Mesonotum blackish bronze, with purplish tinge in some lights, rarely with greenish reflection, except at the sides ; on the middle is a large, rectangular, brown pollinose spot reaching from just before the suture to the prescutellar depression and extending to just outside the acrostical bristles, between each of which is a pale spot. Pleura green, with bronze reflections ; grey pollinose. Scutellum bronzy, the corners green ; bearing four bristles.

Legs green ; tarsi black, the hind ones brown. Coxae densely grey pollinose and white pilose. Front femora with an anterior and posterior row of spines on the ventral surface, the spines rather fine and decreasing in length from the base, both rows interrupted near the middle ; neither row reaches the apex, but the hind row is shorter ; on the basal half of the postero-ventral surface are several long, fine white hairs. Front tibiae with an entire row of fine short bristles on the ventral surface, the terminal one not strengthened nor long ; above with four small bristles. Tarsi simple. Legs otherwise not distinctive, their hairs black.

Wings hyaline. Squamae and halteres yellow, the former white ciliate.

Abdomen green, with bronze reflections, the sides thickly grey pollinose, the dorsum moderately covered with brownish pollen. Abdominal hair black.

The male genitalia are small.

There are four female specimens of this pretty species in the collection, three from Cape Town, collected by Dr. Péringuey in 1913, and one from Junction of Crocodile and Marico Rivers, Transvaal, February 1918, collected by Mr. R. W. E. Tucker.

Hydrophorus praecox Lehm.

Owing to the fact that no male specimen is present in the collection, I quote the description of Lundbeck, as given in the English edition of part 4 of his Diptera Danica.

" *Male.*—Length, 2·5 to 4·5 mm. Head as high as broad ; vertex and frons aeneous, somewhat greyish pruinose at the sides. Face broad, greyish white, the palpi of the same colour. Occiput greenish, grey pruinose ; postocular bristles black, the hairs below white. Jowls distinct, not broad, grey. Antennae black, third joint slightly longer than broad, pointed ; arista a little longer than the antennae. Thorax olive, sometimes greenish, especially at the sides, and more or less with coppery reflections, a little pruinose, somewhat shining ; in the middle there is a dark stripe divided by a very fine pale line, and to each side of the dark stripe the green colour forms more or less distinct stripes ; dorso-central bristles numerous. Scutellum with four bristles. Pleura greenish or aeneous, densely whitish grey pruinose ; propleura with grey hairs and one black prothoracic bristle. Abdomen somewhat flattened, greenish, aeneous or coppery, rather densely greyish white pruinose ; it is somewhat densely covered with pale hairs a little longer at the sides. Venter grey. Hypopygium generally quite hidden. Legs quite green, coxae light grey pruinose, femora and tibiae somewhat pruinose, the tarsi blackish. The legs have short black hairs intermingled with pale pubescence, the latter especially distinct towards the end of the tibiae and on the tarsi ; coxae pale haired ; front femora with a row of short spines below towards the anterior side, the front tibiae with a row of short spines below, the apical one large and strong, besides with a few small dorsal bristles ; posterior femora and tibiae with various scattered, not long, bristles. Wings somewhat long, hyaline ; veins black, paler towards the base ; the last part of the discal (fourth) vein slightly curved, a little converging towards the cubital (third) vein. Squamae whitish, with white fringe. Halteres whitish or whitish yellow.

" *Female.*—Face not broader than in the male. Front femora with two rows of spines, as there is, besides the row found in the male, one more posteriorly ; apical spine below the front tibiae shorter than in the male."

Five specimens, all females, agree almost perfectly with specimens from Denmark. Until the male is compared with European specimens there must be a slight doubt about the South African specimens being *praecox.*

Liancalus Loew.

This genus is readily distinguished from all others in the family by the long mesopleural process projecting along the posterior outer base of the anterior coxae. Only the following new species is known from South Africa, while *L. virens* occurs in northern Africa and Europe. These are among the largest and most brilliantly coloured members of the family, and the males usually possess a striking pale apical spot on the wing.

Liancalus peringueyi n. sp.

(Figs. 8, 8*a*.)

Allied to the European *L. virens*, but the face and front are much darker, the second joint of the anterior tarsi is densely short black haired on the postero-ventral surface and the wings are much less extensively fuscous.

Length, 8 mm. *Male.*—Face wide, brilliant deep green, but covered with abundant brownish pollen which becomes paler along the orbits and above. Front of the same colour but the pollen blackish brown except below and above. Occiput grey pollinose, the bristles black, with a few of those towards the lower edge of the eyes yellowish, the sparse beard also yellowish. Palpi large, brown pollinose, with black hairs. Antennae black; first joint bare above; third joint broader than long, with a broadly rounded point, the arista inserted beyond the middle of the joint, slender, about as long as an eye.

Mesonotum rather dull greenish, with four purplish-bronze vittae, the median ones ending at the posterior third, the lateral abbreviated at either end and interrupted at the suture; between these vittae a more or less distinct violaceous one. Pleura greenish, grey pollinose. Scutellum violaceous, its sides green; bearing six long marginal bristles.

Legs blackish green, the femora and coxae grey pollinose, the tarsi blackish. First joint of the anterior tarsus almost as long as the remaining joints combined, slightly swollen at apex; second joint short, not longer than the fourth, compressed and broadened (higher than wide), with silvery reflection below, its anterior edge densely beset with short black bristles which are curved at the apex; third segment longer than the second, silvery on the lower surface, scarcely widened. Claws of all the tarsi long and slender. Coxae with short, fine yellowish pile. Legs short black haired except that the bases of the femora have some fine pale hairs.

Wings hyaline, except the brownish areas shown in fig. 8. Squamae and halteres yellow, the former yellow ciliate.

Abdomen bright deep green, the sides very densely pale grey pollinose, the broad posterior margin of each segment expanded anteriorly in the middle, brown pollinose on more blackish ground. Sixth segment green, the genitalia blackish, with long filamentous outer lamellae. Abdomen yellow haired, the basal bristles black.

Female.—Similar in colour to the male but the front is less thickly pollinose, the green ground colour being quite evident, and the middle line of the abdomen and narrow bases of the segments are brown pollinose. The wings are without maculation, the legs simple.

Type male, Cape Town, Table Mountain, October 1917, collected by Mr. K. H. Barnard; type female, and another female, Matroosberg, Ceres Division, January 1917, collected by Mr. R. M. Lightfoot.

Sympycnus Loew.

Six species belonging to this genus have been previously recorded from Africa. An additional species is here described.

Table of Species.

Males.

1. Apical two joints of front tarsi white . . . *nectarophagus* Curran *
Fore tarsi without whitish apical joints 2
2. First three joints of hind tarsi considerably thickened and bearing abundant short black hair, the fourth joint longer than the third *caffer* Loew
Third joint of hind tarsi much longer than the shortened fourth joint, the basal joints normal . . . . *simplex* n. sp.

Females.

1. Hind femora entirely pale, or pale brownish on only the upper apical half or less (2·5 mm.) . . . . *caffer* Loew
Hind femora brown above on almost their whole length (over 4 mm.) *simplex* n. sp.

Sympycnus caffer Loew.

Length, 2·5 mm. *Male.*—Thorax metallic green in ground colour, the abdomen blackish bronze with some yellow markings. Face very narrow on the lower half, gradually increasing in width on the upper half, wholly greyish pollinose. Front almost black, with a covering of brownish pollen which almost conceals the ground colour. Occiput dark metallic green covered above with brownish grey, below with grey, pollen, the orbital cilia black, the hairs below short, fine, white. Palpi small, subtriangular, pale yellowish. Antennae wholly black; third joint broader than long, subtriangular; arista black, slender, longer than the face.

Mesonotum brownish pollinose, leaving an almost bare vitta between the acrostical and dorsal-central bristles, but the ground colour is usually very apparent over the whole surface. Pleura grey pollinose.

Legs, including the coxae, yellow, only the middle coxae brownish on the outer half. The posterior femora are brownish above on the apical half, their tibiae brownish with yellow ventral surface, the colours diffuse. The hind tarsi are wholly black, while the last four joints of the anterior four and apex of the first joint are brownish, the joints with darker apices. The hind tarsi are shaped as described in the synopsis of the species, the third joint with a short, stout, apical spine below on each side, the last two joints slender, and longer than the second and third. The hair on the legs is all black and is quite short for the most part; on the hind tibiae it is moderately abundant and subciliate as it forms a dorsal and anterior longer row from base to apex, the anterior row being much longer and stronger and situated below the middle. The first three posterior tarsal joints bear rather abundant short black hair.

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* Rev. Zool. Afric., vol. xii, p. 472, 1924.

Wings lightly infuscated, the posterior cross-vein slightly beyond the middle of the wing and very slightly oblique; the fourth vein approaches the third slightly, the slight forward curvature taking place at the basal fourth of the last section. Squamae yellow, with slightly darker margin and black cilia. Halteres yellow.

Abdomen with the venter yellow on more than the basal half, the sides of the first segment also yellowish. The second segment is somewhat variable in colour; normally it is brownish yellow, with a narrow median vitta and the hind margin bronzed, the yellow colour concave behind so that the dark colour again approaches the base at the sides, but the pale colour may be much less extensive than described. Genitalia normally hidden, the outer lamellae short, rather filamentous.

This species is represented in the collection by two males collected at Durban, Natal, August 1920. I have also thirty-two specimens of both sexes from East London, 17th and 23rd February 1924; male, Port Shepstone, 21st August 1920. This latter lot were all collected by Mr. H. K. Munro.

Sympycnus simplex n. sp.

Length, 4 to 4·5 mm. *Male.*—Eyes almost touching below the middle of the greyish face which is slightly widened below and quite wide at the antennae. Front evidently bronze green, covered with brownish pollen. Occiput hidden. Palpi small, triangularly oval, yellow in colour and bearing two or three yellow bristly hairs. Antennae black; third joint triangular, with rounded angles, not quite one-and-one-fourth as long as wide; arista sub-basal, black.

Thorax moderately greyish ? (or yellowish brown ?) pollinose, probably leaving either two or four rather bare vittae, but it has been wet and I am not able to make certain of this point. Pleura greyish pollinose; scutellum almost without pollen.

Legs, including the coxae, yellow, but the posterior four coxae are brown on the anterior and exterior surfaces except on the apices; the posterior femora are brown on the upper surface, their tibiae tinged with brown, the posterior tarsi wholly and the remaining tarsi except the basal three-fifths of the first joint brown or black, the bases of the joints of a slightly paler colour. The first joint of the front four tarsi is almost as long as the remaining four joints combined, while the first two joints of the hind tarsi are of almost equal length. Legs simple, with normal black hairs. Coxae with pale pile.

Wings quite smoky, especially in front. The posterior cross-vein is situated before the middle of the wing and is almost rectangular, the fourth vein approaches the third slightly towards the wing margin, its last section having a slight anterior angulation situated at about the basal two-fifths. Squamae yellow, with black margin and cilia, the halteres yellow.

Abdomen blackish bronze; genitalia small, concealed.

Female.—Differs only sexually; the face is less than one-fifth the head width, slightly widened above and below. The third antennal joint is wider than long, rounded apically.

Type male, Oudebosch, Caledon Div., 1500 ft., January 1919, collected by Mr. K. H. Barnard; type female, same locality, December 1920, collected by Mr. R. M. Lightfoot.

Asyndetus Loew.

This genus is allied to *Diaphorus* Mg., but is readily distinguished by the termination of the thickened portion of the costa at or slightly beyond the tip of the third vein and the location of the cross-vein beneath or before the apex of the first vein. Three species have been recognised from Northern Africa, while there are apparently two undescribed species before me.

Asyndetus crassitarsis n. sp.

Length, 3 mm. *Male.*—Face about one-fifth the head width, green, densely argenteous grey pollinose; front metallic green, almost without pollen; occiput of the same colour, grey pollinose. Beard white. Antennae wholly black, the third joint scarcely longer than broad, its apex broadly rounded; arista almost as long as head height, finely short pubescent. Palpi green, clothed with greyish pollen and black hairs; proboscis blackish.

Thorax and scutellum dark metallic green, the mesonotum with bronze reflections and a darker bronze vitta on either side of the middle line. Dorso-central bristles in four pairs, unusually strong; a single weak bristle above the front coxae. Thorax greyish pollinose, the dorsum only thinly so.

Legs metallic blackish green, greyish pollinose, black haired; knees and the anterior tibiae reddish. Anterior tarsi with the first joint as long as the following three, slender, the fourth a little broadened and flattened, the fifth slightly broader than the fourth, but little longer than wide, flattened.

Wings cinereous hyaline, the fourth vein evanescent opposite the apex of the fifth ; there is an indication of a vein running to the apex of the wing, but it lies considerably closer to the costa, its inner end closer to the base of the wing than the apex of the fourth vein. The posterior cross-vein is slightly oblique and joins the fourth vein slightly beyond the tip of the first vein. Squamae and halteres pale yellowish, the former white ciliate.

Abdomen dark green, with brassy reflections and moderately clothed with greyish pollen, which is a little thicker at the sides. Genitalia black, with four stout apical bristles, the lamellae small, shining black, the genitalia elsewhere greyish pollinose. Hairs of the abdomen all black.

Described from a single male from Kaapmuiden, Transvaal, 30th October 1919, collected by Mr. R. W. E. Tucker.

Asyndetus indifferens n. sp.

Length, 3 mm. *Female.*—Very much like the preceding, but the anterior tibiae are wholly dark, only the narrow knees reddish. The palpi are black, broader and smaller, the antennae smaller. The only differences, except in the wings and colour of the legs, are sexual. The fourth vein is not so completely broken as there is an indication of a junction of the fourth vein proper with the detached portion, the inner end of which does not reach so close to the base of the wing, and the vein itself is not as close to the costa as in *crassitarsis.*

A female labelled M'fongosi, Zululand, December 1916, collected by Mr. W. E. Jones.

This may prove to be the female of *crassitarsis* but it does not seem likely that it is so. As a rule the legs of the females are paler coloured than in the males, and for this reason I feel certain that it is a different species. The two species may be readily separated as follows :—

A. Anterior tibiae wholly yellow, the tip but slightly darker *crassitarsis* n. sp.
AA. Anterior tibiae brown, the very narrow base reddish . *indifferens* n. sp.

Diaphorus Meigen.

Syn : *Munroiana* Curran, Ann. Transv. Mus., vol. x, pt. 4, p. 229, 1924.

The collection contains five specimens, three of which belong to an undescribed species. The adults of this genus are not uncommon about honey dew.

Table of Species. Males only.

1. Two or three abdominal segments chiefly yellowish 2
At most the venter yellowish 5
2. Second and third abdominal segments with greenish median vitta *dasycnemus* Loew
Second and third segments with the apices dark, the third rarely subvittate 3
3. Both the front and middle pulvilli greatly enlarged, the claws wanting on both pairs of legs . . . . *lawrencei* n. sp.
Only front pulvilli enlarged ; middle tarsi with claws ; antennae black . 4
4. Hind tibiae with unusually long hair except above, the hair becoming somewhat shorter apically . . . . *inversus* Curran *
Hind tibiae not with long cilia-like hair behind, wholly rather short haired *brunneus* Loew
5. Eyes broadly separated above the antennae . . . . *munroi* Curran
Eyes contiguous above the antennae 6
6. Hind femora strongly arcuate, the apical fifth of the posterior surface with dense fine hair and a series of fine cilia on their apical half below *amplus* Curran
Hind femora but slightly arcuate, without abundant hair on apex behind and with only four or five bristles of unequal length postero-ventrally *rita* Curran

Diaphorus brunneus Loew.

Female.—Length, 5 mm. Head dark metallic green in colour, the face, front, and most of the occiput so densely brownish-yellow pollinose as to hide the ground colour ; face about one-fifth as wide as the head, the front scarcely wider. Orbital cilia black above, the hairs below the neck white. Antennae reddish, the third joint more brownish, wider than long. Arista dorsal, almost as long as the head, finely short plumose on its whole length. First antennal joint bare above. Palpi pale yellow, elongate oval, with a black apical bristle ; proboscis blackish.

Mesonotum metallic green, the colour almost obscured by dense greyish pollen ; pleura almost blackish, with dense grey pollen. Scutellum concolorous with mesonotum, with two pairs of strong marginal bristles. A single strong bristle above the anterior coxae.

Legs, including the coxae, yellow, the tarsi becoming brownish at the apex ; middle coxae brown almost to the tip on the anterior and outer surfaces ; hairs of legs and coxae all black.

Wings cinereous hyaline, the large cross-vein not oblique. Squamae and halteres yellow, the cilia of the former black.

First three abdominal segments and the whole venter yellow, the

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* Rev. Zool. Afric., vol. xii. p. 474, 1924.

apices of the second and third segments and the base of the third blackish, the whole of the fourth and fifth metallic green. Abdomen thinly greyish-white pollinose on the disc, thickly so on the sides; the hair all black.

Male.—Length, 5·5 mm. The brown face is entirely obscured by white pollen, the frontal triangle long, normally narrowly connected with the vertical triangle (narrowly contiguous in some dried specimens); pollen of frontal triangle similar to that on face, the vertical triangle with more ochreous pollen. Occiput black, densely grey pollinose. Antennae yellowish brown to blackish, the subcordate third joint slightly wider than long, the slender brown arista situated well above the middle of the joint. Palpi pale yellow, with sparse black hairs; proboscis brownish red or brown, with white hairs; beard white.

The mesonotum is so densely ochreous-brownish pollinose as to almost conceal the ground colour, the posterior slopes and side margins in front of the wings with paler pollen. Pleura black, with green reflections showing through the dense greyish pollen, the posterior lower edge and a spot below the halteres yellow. Scutellum green, its margin usually wholly pale yellow, the whole grey pollinose.

Coxae yellow, the middle ones almost all brown, the hairs black. Legs yellow, the tarsi becoming brown from the tip of the first joint. Front femora beneath on the anterior edge with a row of fine black bristles which become shorter apically, the longest not over half as long as the height of the femora, on the postero-ventral surface with a much shorter row, but the basal bristle is stronger than any in the anterior row; in addition there is a row of longer black cilia on the apical half of the posterior surface. The anterior tibiae bear on their postero-ventral surface a row of short even cilia which are shorter than the width of the tibiae. The apical joint of the front tarsus is slightly widened and bears rather long hairs above; their pulvilli are brownish tinged, slightly longer than the fifth segment and clothed on the edges with short silvery white pubescence. All the hairs on the legs are black. The first joint of the anterior four tarsi is at least twice as long as the second, the first two joints of the posterior ones of practically equal length.

Wings greyish hyaline. Squamae and halteres yellow, the former with black cilia.

First three abdominal segments yellowish or brownish yellow, the venter of the fourth, brown, the narrow apices of the second and third segments and the whole of the following ones blackish, often more or less greenish, the dorsum bronzed, the sides more densely greyish pollinose than the dorsum. The hair is black, moderately long, the bristles not well developed; the four bristles on the genitalia are robust and almost as long as the fourth abdominal segment. Genitalia brown, greyish pollinose, the appendages brownish.

The description of the female is from a specimen collected at Kamati in the Eastern Transvaal. That of the male is from a specimen from Pretoria and another from East London, both collected by Mr. H. K. Munro. The male is not represented in the collection but the description is given in order that it may be compared with the following new species.

There is a single female collected by Mr. Lawrence at Zandemela, Port. E. Africa, in December 1923, which is either an undescribed species, *dasycnemus* Loew, or an unusual form of *brunneus*. It has a wide green vitta on the third abdominal segment. Unfortunately, the abdomen has been partly eaten away.

Diaphorus lawrencei new species.

The description of *D. brunneus* Loew applies well to this species, with these exceptions:—

Lengths, the same. *Male.*—Antennae brownish red, paler beneath (third joint missing, probably dark reddish); the middle tarsi lack claws and the pulvilli are greatly developed as on the front tarsi. The apical abdominal segments are green.

Female.—Antennae wholly reddish, otherwise as in *brunneus.*

Described from one male and two females, Nyaka, Port. E. Africa, February 1924, collected by Mr. R. F. Lawrence.

This species cannot be confused with any others so far known from the region, as the red antennae at once distinguish the female, and the enlarged pulvilli of the middle tarsi are characteristic of the male.

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7. *A Contribution to the Knowledge of the Genus Allodape, St. Farg. & Serv.; Order Hymenoptera, Section Apidae (Anthophila).* By Dr. H. BRAUNS. (With Plates XI, XII, and 2 Text-figures.)
8. *On some South African Ichneumonidae in the Collection of the South African Museum.* By CLAUD MORLEY, F.Z.S., F.E.S., Memb. Soc. Entom. de France, etc. Part III.
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7 *A Contribution to the Knowledge of the Genus Allodape, St. Farg. & Serv. Order Hymenoptera; Section Apidae* (*Anthophila*).—By Dr. H. Brauns.

(With 2 Text-figures and Plates XI and XII.)

This paper deals with the South African species of the genus *Allodape.*

We have now a fairly good knowledge of the Neuroptera, Orthoptera, Hemiptera-Homoptera, Lepidoptera, and perhaps also of the Coleoptera of the South African region; but the study of the Hymenoptera, the group of insects probably the most highly endowed with intelligence, has so far been much neglected. The literature dealing with this order is scattered through the scientific periodicals of the whole world, and is therefore not readily accessible to the South African student. For this reason monographs that recapitulate all that is known on some part of the subject, including that which has not been published as yet, become a necessity, and justify this contribution.

The types of the new species and the representatives of those described by the earlier authors, both dealt with in this paper, are deposited in the collections of the South African Museum.

BIOLOGY.

Entomologists who devote their attention to the study of the Apidae have agreed to divide this family of Hymenoptera into two sections—namely, Solitary Bees and Social Bees.

The first build their more or less rudimentary cells—or rather, mostly partitions—in hollow stems, either scooped out by their own exertions or found ready adapted for use, or they build their homes beneath the soil. These they store with a certain amount of food, and deposit an egg within or close to the cell or partition, leaving the future larva to look after itself.

We know also of certain species that construct burrows or galleries in the soil, so close to each other that a novice comes to the conclusion that he has before him the result of the work of a single large family. Among such species are certain Palearctic *Andrena*, American *Halictus*, and, in South Africa, *Fidelia paradoxa*, Friese, *Anthophora circulata*, Fabr., and other kinds of Anthophora. Pseudo-colonies is the name given to these agglomerations.

Individuals of *Xylocopa caffra*, L., a carpenter bee, which in South Africa chisels its galleries in dry stumps, live at times so closely together in the same piece of wood that the galleries are nearly contiguous, but they never communicate. In spite of the vicinity of the burrows, and the tendency to construct them close to each other, any one builder or miner never interferes with the work of another. Each stays in its own burrow, and does not enter the house of its neighbour unless by mistake. Let us go a step further. We know that members of a few species of *Halictus* and *Nomia*—probably more will be found to do so—associate to dig together a gallery with only one entrance. Several females use this entrance and the same gallery, but they burrow sideways to construct their small solitary partitions for the storage of food and deposition of the egg.

The second section, a numerous one, comprises the social bees which live together in more or less large numbers of individuals, building, as in the case of the common honey-bee, most elaborate structures of cells ; in most cases feeding their larvae, tending them until they are near the adult stage, and closing their cells for the pupal stage.

The old authors considered the species of the genus *Allodape* to be mostly parasites ; and from the time of Lepeletier St. Fargeau we find them quoted in hymenopterous literature as being parasites or messmates. This mistake is not easily explained, because the species of *Allodape* bear on the legs a distinct collecting apparatus of hair-brushes. They are in fact true social bees, although their colonies are as primitive as can be. There is no building of cells, no shrouding of the brood whatsoever. The female excavates a tunnel into the dry stem of iridaceous plants, Iris, Rosa, Aloe, Rubus, amaryllid plants, etc., or any other plant with a soft pith ; it removes the latter entirely, and the nest is then ready. I believe that in most cases labour is not even involved. They as often as not use the stems previously hollowed out by *Ceratina* bees, or perhaps *Diploptera* wasps. Some of the smaller species utilise the galleries made by Coleoptera in dead logs or poles, or again the long thorns of mimosa trees. In the plains of the Karroo, where suitable plants are not as common as in other parts of South Africa, some of the small species even nest in the ground, in the steep sides of dry rivers and " sluits," and even in the walls of houses. So, for instance, does the widely distributed *Allodape pringlei*, Cam.; but this nesting in the ground is comparatively rare.

The colony is founded by the female alone at any season of the year. It is, of course, clearly established that at higher altitudes the seasonal temperature and the want of flowers must impede or hinder the continual gathering of food, but there is no hibernation. A warm sunny day finds the bee out of doors, even in the middle of the winter season. Certain plants flower only in the cold or winter season, as, for instance, the Ericaceae, some Aloes, Lycium, and others. Something is always to be had. After excavating the stem to a convenient depth, or putting the last touch to the ready-made gallery, according to her taste, the female deposits the egg at the more or less rounded bottom of the hollow part. The egg is of large size in comparison with the size of the bee, and of kidney shape. As soon as the larva is hatched the mother commences feeding it. The egg or eggs that will hatch last are always to be found at the bottom of the cavity; above them are to be found the younger larvae, then the more advanced ones, and towards the entrance are the pupae. Sometimes, however, this disposition will be found to be disturbed. The mother in carrying food to the young larva at the lower part of the cavity must perforce constantly pass the pupae and larger larvae, and may thereby slightly disturb the above-mentioned order, but this occurs rarely.

A special worker class, such as we find in the genera *Apis*, *Bombus*, *Trigona*, and *Melipona*—that is to say, a more or less crippled female, is not to be found in *Allodape*. All females are fertile, and, as far as known, take a share in breeding and feeding the larvae. In all probability the young females, after fertilisation, constantly found new nests. But they return for a considerable time to their original home and there feed the foster brother- and sister-larvae. The males return to the nest as well, and the latter when opened in the evening are found to be crowded with a population of both sexes. The old mother bee is easily recognised through her tattered wings and other signs of hard work and old age, but otherwise there is little difference in size between herself and her female progeny.

There are three types of larvae in the genus *Allodape*, corresponding with three methods of feeding. In the first case the larva is provided on the thoracic part of the body with a pair of movable and contractile fleshy protuberances which we will call, in accordance with their function, arms. The larva of *A. ceratinoides*, Grib., is here figured as a conspicuous example of this form. These arms enable the larva to retain firmly the small morsel of food deposited between them by the mother bee, who feeds in this way a number of larvae at one visit. They close these arm-like processes round the morsel of food, and are thus able to retain their hold of it until it is devoured. On opening the nest shortly after the entrance of the mother bee one finds a number of larvae supplied in this manner with food particles, and busy feeding. Nearly all species of large size, in fact the great majority of the South African species, belong to the section the larvae of which are of this type. I find it impossible to describe in detail the structural forms of the larva within the compass of this paper. I have noticed that the form of the integumentary appendages differs in different species, and even alters in appearance in the different stages of development following the consecutive castings of skin. Therefore the description of the larvae of different species had better be kept over for a special paper dealing with a subject worthy of careful and detailed study.

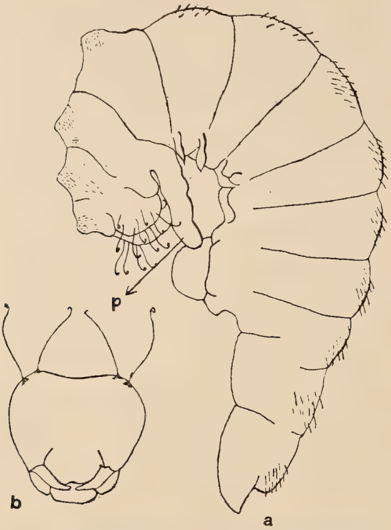

FIG. 1.—*Allodape ceratinoides*, Gribodo (*crinita*, Brauns, *i.l.*). *a*, Adult larva. *b*, Head of the same (*p.* pseudopodion).

The second type of larva is illustrated by that of *A. pringlei*, Cameron. It is easily seen from this figure that it is altogether different from the first. The egg is no longer lying loose at the bottom of the cavity, but a row of eggs (up to ten or more in number) is fastened, perpendicularly, probably by an agglutinous substance, by the lower polar end to the walls of the hollowed stems, and arranged in a more or less spiral curve. The larvae are provided with a great number of short, fleshy, and contractile appendages disposed round the segments. Friese uses the term Pseudopodion for these appendages. By the aid of these fleshy protuberances the larvae are able to keep their position in the same level of the lumen of the gallery. By pressing these protuberances against the rugosities of the walls, and also against the bodies of their neighbours, they maintain the position of the body in the gallery in such a way that the apical end of the larvae and the heads of the same are each at the same level. It follows that the hatching of the larvae must take place, approximately, at the same time. It is probable that the bee lays and fastens the row of eggs in rapid succession. The feeding of the larvae is accomplished in the following manner. The mother bee deposits the food in the space left between the heads of the larvae so that they can all feed at the same time from the same food supply. The pupae and the larvae after the last casting of skin are found near the entrance, and the agglomeration of larvae still feeding are below them, nearer to the bottom.

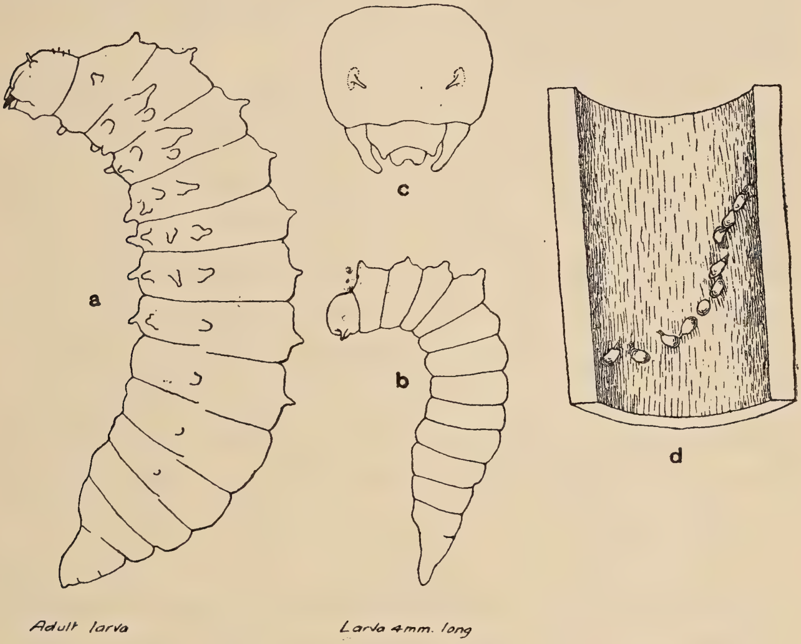

Fig. 2.—*Allodape pringlei,* Cameron (*pungens,* Brauns, *i.l.*). *a,* Adult larva. *b,* Larva 4 mm. long. *c,* Head of adult larva from above. *d,* Interior of a hollow stem of Rubus, with the eggs fastened by one pole in a row.

In principle the manner in which the larvae are fed in the two typical instances here given is really the same. The larvae are not fed directly by the mother bee, nor by regurgitation, but they are fitted with integumentary organs for holding the food near the buccal parts, and also in one case for clinging to the walls of the cavity. They use the food supply in a way similar to that which that eminent observer of ants and their life-history, Professor W. M. Wheeler, has shown us so clearly to happen in the case of Ponerine Ant larvae. It may be stated, however, that the larva casts off the integumentary appendages at the last moult leading to the pro-pupal stage, when it has already assumed the maggot-like appearance of the usual bee larva.

The third method of feeding the larva is, in comparison with the two already described, the most interesting and the most important. I have only recently observed it in the case of a small species making its nest in the Karroo plains in the dry stems of a native asparagus. There is no doubt about the result of my observations since I have come across about a dozen colonies.

In this species the mother bee carries in food for one larva only at a time. As in the first type, she first lays the egg, which in comparison with her own size is enormous, being almost equal to one-third of her own bulk. After the oviposition she brings in enough food to last for the larva until it reaches the pupal stage. The volume of this pollen mass is about the same as we find in cases of solitary bees, as for instance in any of the partitions of the nest of a *Ceratina* species of the same size. It is quite sufficient for one larva. If we open the nest we find one larva clinging to a pollen mass, another to the next one, and so on. On the top of all is a fresh egg, and above it a pollen mass which the bee is about to complete. When several larvae are present the one on the bottom is the most advanced. I found the colonies provided in this manner in all stages of growth. The external appearance of the larva is also different from that of the two first-described types. The larva clings closely and broadly with its very flat ventral surface to the food mass. Only two comparatively small and inconspicuous fleshy protuberances, the anterior larger than the posterior, are to be seen on each side of the larva. It will be necessary to observe more closely the habits of this species. More will probably be found providing their larvae in this manner.

There is only one difference separating the economy of this bee from that of the general type of solitary bees, namely, that in this instance there is no partition between two adjacent larvae and their store of food.

This point is of great importance, and should be thoroughly grasped. All other solitary bees provide first the food, then lay the egg on it, and close the cell or partition, proceeding after this with another partition resting on the closed one. In the case of this *Allodape* the process is the same, except that the egg is first laid, then a sufficiency of provender carried in for the future larva; another egg is laid above the first, food brought in for the same; and so on. But there is no partition separating the larvae and their food as in the case of all other solitary bees ; and the gallery is not closed after the last egg has been provisioned with the required food.

The reason for this method of oviposition may perhaps be explained as follows. As mentioned before, the egg is very voluminous in comparison to the size of the mother bee. It is hardly credible that a small bee should lay eggs one-third her own size in rapid succession. Such eggs take time to mature in so small an ovarium, and cannot therefore be laid at short intervals. Owing to this, the bee has time enough to bring in food sufficient to feed each larva till the pupal stage is reached.

In the first type of oviposition and food storage, it is true, as already stated, that the egg is also very large, but we do not know the time required for the completion of the oviposition. In the second type, where numerous eggs are fastened to the walls of the gallery, the size of these eggs is small, and accords with the size of the mother bee. From the description of their position it is evident that they must be laid in rapid succession in order to allow all the hatched larvae to feed from the same food supply, and at the same time.

It is plain that more observations are needed to complete the knowledge of the economy of this most interesting genus of solitary bees, but the few facts now recorded cannot but be of value as throwing a new light on the evolution of the foundation of colonies among Apidae.

DISTRIBUTION.

The species of *Allodape* are distributed over tropical and subtropical Africa. They occur also in India and Australia. In tropical Africa there is an exceedingly large number of species, but owing to the small size of most of them, as well as to the difficulty inherent to identification of the species which are not bred out of the nest, little attention has been given them by hymenopterologists.

They abound in the western, eastern, and southern parts of South Africa, chiefly on the coastal belt, where abundance of flowers apparently favours their occurrence. In the grassy plains of the Orange Free State and the Transvaal they are rare. In the Karroo plains of Cape Colony they are numerous. Near Port Elizabeth and near Cape Town I found them nesting in great numbers in the dry stems of liliaceous, iridaceous, and amaryllidaceous plants and others. I also found numerous species in the tropical parts of West and East Africa.

Although the number of African kinds must be very large, only a comparatively small number of species has been described, and, unfortunately, from single captured specimens. The descriptions are on that account very insufficient and unreliable. The females of the smaller species are very difficult to separate owing to the absence of good structural characters. Although the colour and the facial markings of many kinds seem to be fairly constant, and must be taken into account for the purpose of differentiation, in other species these characters are no longer constant. For this reason I have only made use of them when other distinct differences failed. Thus some parts of the body such as the coxae, trochanters, and femora of the males, the ultimate tergites and sternites, and also the facial surface of the females afford in certain species useful structural distinctions.

PARASITES OR MESS-MATES.

I have described the only parasite hitherto known to be found in the nest of *Allodape* bees: *Eucondylops konowi*, Br. (Friese's Die Bienen Afrikas). I met with this singular bee in the nests of *Allodape elizabethana*, Br., and *A. paradoxa*, Br. Near Willowmore I discovered it also in the nest of *Allodape pringlei*, Cam., and Friese received it from the northern parts of South Africa. It is, however, not yet clear if this bee is a true parasite of the *Allodape* bee, or whether its relations to the latter are those of a mess-mate, as in the case of *Bombus* and *Psithyrus*. It is to be hoped that other species of *Eucondylops*, perhaps larger ones, may be found with the larger species of *Allodape*.

DESCRIPTION.

It is too early to attempt giving the description of the species occurring in the southern part of the African continent, and I have therefore restricted my task to that of such as I have taken from the nest, or bred from the nest. This paper cannot be more than the prodromus of a monograph which has yet to be written. I have examined a few types, but can attach little value to the descriptions of Cameron, Vachal, and others. Cameron described a species of *Allodape*, of which I saw the type, as a *Prosopis;* probably he has done the same for more species of the first genus. Owing to the inadequacy of the literature I have been compelled to describe most of the species in my collection, and others, as new; but as the number of existing descriptions of *Allodape* is small, the task of clearing the synonymy will not be a heavy one for the hymenopterologist who will ultimately undertake it. Friese in his Die Bienen Afrikas (Schultze's Reise im Westl. und Zentral. Südafrika) enumerates thirty-one African species. My own research leads me to the conclusion that this is only a " drop in a glass of water."

The tropical *Allodape* seem to be very interesting, and are made conspicuous by the structure of the males. I hope that this paper will lead to a more careful observation of the habits of this interesting genus. I hold that to describe species of this genus from single captured specimens will only produce endless confusion and lay an almost unsupportable burden on those who undertake further work in connection with this genus of bees.

The genus *Allodape*, St. Farg. & Serv., is founded by these authors on *Allodape rufogastra*, Lep., which has thus to be considered as the " Genotype." The characters assigned to the genus, when translated, are as follows : " Maxillary palps four-jointed ; labial palps four-jointed. Ocelli disposed in a triangle. Scutellum bluntly raised ; tibiae of the intermediate legs with one simple spur at apex, those of the hind legs with two simple spurs. Radial cell of the fore-wing oval, narrowed from middle to apex, with a small appendix ; three cubital cells, the first larger than the second, which is narrowed towards the radial, and receiving the two recurrent nervures ; the third cell reaches the apex of the wing. Tarsal claws bifid."

St. Fargeau adds that he does not know on what genus the species (*A. abdominale*, St. Farg., *A. rufogastra*, Lep. & Serv.) is a parasite. Taschenberg, in his synoptic table of bees, gives the following generic description of the genus *Allodape*, of which I here give the translation : " Maxillary palps dimorphic. Genae small. Labrum short, convex, hardly visible. Mandibles bi-dentate, their base reaching the edge of the eye. Ocelli disposed in an acute triangle. Antennae filiform, with the second joint short. Radial cell lanceolate, narrowed from the middle towards the apex. Two cubital cells, the first about twice as long as the second, the latter arcuate outwardly, only slightly narrowed on the upper side, and receiving both the recurrent nervures, the first of which is further removed from the anterior corner than the second from the posterior. Median nervure arcuate. Basal lobe of hind wings about the length of the submedian cell. Body fairly smooth, elongated. Thorax ovate ; abdomen elliptical, the last segments depressed towards the apex in the female, but as acuminate as in the female of *Ceratina* ; legs pilose as in the female of *Ceratina*, and without genicular scale."

Gen. Allodape, Lepell.

Encyl. method. Ins., x, 1825, p. 18.

The genus *Allodape* is clearly related to *Exoneura* and *Ceratina.* The former is an Australian genus, of which the habits are unknown. *Ceratina* larvae are long and parallel in shape, but have on the sides of the segments conspicuous fleshy protuberances, which are of no actual use because they are immovable; but their presence seems to indicate a near relationship to *Allodape.*

The shape of the ♀ and ♂ respectively is very similar in both these genera. In each the female has the apical end of the abdomen sharply pointed, whereas the apical end of the male is convex and tumid, the last tergites curving towards the ventral surface. On the other hand the ♀ of *Allodape* has a very characteristic structure of the abdominal segments. The tergites overlap each other extensively towards the ventral surface, and are therefore much wider than the corresponding sternites. The apical three or four tergites are in all species distinctly flattened, the flatness increasing towards the tip of abdomen. This structure of the abdomen enables the bee—as it does in the genus *Megachile*—to curve the abdomen upwards to an unusual extent. The sting is therefore also directed upwards. This peculiarity is of biological value. When the stem inhabited by *Allodape* is disturbed, one of the females moves backwards to the entrance, and closes it completely by means of the flattened surface of the last tergite, and the sting directed upwards defends the entrance very effectively. The surface of the flattened tergites is as a rule very roughly sculptured. The first tergite is nearly always hollowed at the base, and with two rounded, semi-lunar, raised, and not very conspicuous tubercles, one on each side. The tongue is very long, and although the species of *Allodape* visit all sorts of flowers, they prefer those that have a tubular corolla, such as the Labiatae, Solanum, Lycium, and others. The clypeus in the female of all species of *Allodape* is conspicuously elongated in front. The mandibles of the female are short and broad, triangular in form, and very powerful, so as to be able to remove the pith of the stems inhabited by these bees. The spurs of the hind legs are very long, nearly half the length of the metatarsus. In the male sex of a large section of the South African species the trochanter of the hind legs bears two dentiform protuberances, while in another, but smaller, section of South African species the trochanters are simple. This character may perhaps lead to a morphological division of the South African species into two distinct sections.

The livery is much alike. The colour of the head and thorax is mostly black, of the abdomen wholly or in part black or red. The face in a large section of the species has in the female three longitudinal lines of white or yellow, one running longitudinally along the middle of the clypeus, the other two along the inner part of the orbits. The extent of these markings is very variable, and cannot be relied upon as stable. A second section has on the clypeus a T-shaped mark of variable size. In all these species the males have generally a totally white or yellow clypeus. Sometimes the face is completely black without white or yellow markings. The scutellum has in some species a white or yellow transverse band, which is variable in size, and may disappear altogether in the same species. The same is the case with the white or yellow bands and spots on the pronotum, the squamae of the fore-wings, and the humeral tubercles of the shoulder. The external border of the eyes at the tempora bears in the majority of species a yellow or white line, more or less variable in size and extension. I have not yet seen any species with yellow or white markings on the abdomen or other parts of the body. It is very difficult as a rule to separate specifically the smaller black species. Only the observation of the nest will give a clue in their case.

Allodape angulata, new sp.

♀. Black; a dull yellow, narrow, median longitudinal line reaching from the frontal margin of the clypeus to the oral margin, but sometimes obliterated or even absent. The inner orbit is of the same colour, broader in the lower part, narrowed towards the vertex, neither reaching to the base of the eyes nor to the vertical margin of the same. The outer orbit at the tempora has a narrow line of the same colour obliterated above and below.

♂. Black. The clypeus is bright yellow with only a small black anterior margin. The yellow colour is sometimes not sharply defined towards the oral black edge. In some of my specimens I find no trace of a yellow line at the tempora. In the lower part of the face between the clypeus and the lower part of the inner orbit is a somewhat triangular large patch of yellow, rounded towards the clypeus and straight along the inner orbit, but not reaching higher than the frontal margin of the clypeus.

♀. Mandibles shiny, short, nearly triangular in shape, smooth, with a few scattered punctures and a long narrow groove along the lower edge, bi-dentate; genae—*i.e.* the space between the mandibular joint and the lower pole of the eyes—hardly conspicuous, half as wide as the 3rd antennal joint. Labrum semicircular, very broadly and roughly punctured, the punctures variolate; clypeus somewhat elongate in the oral part, oral margin nearly straight and slightly sinuate in the middle. The lower lateral edges of the clypeus carinate; the carina, reaching the base of the mandibles, curves towards the inner orbit, reaches the inner margin of the eyes about the middle of the length, runs close to the eyes up to the frontal part, and curves towards the lower stemma, where it reaches the carinae, which enclose the lower stemma. Clypeus coarsely punctured in the upper part and near the edges, smooth longitudinally in the middle. Sides of the face coarsely punctured, more scantily so towards the eyes; frons between antennae more finely and closely punctured than the sides. A carina reaches from each of the upper stemmata towards the middle line, enclosing the lower stemma; below the latter the carinae are angularly broken and run narrowly together towards the clypeus, uniting immediately above the point of insertion of the antennae. Vertex finely punctured between the stemmata, almost smooth between the latter and the eyes, and bearing only a few setigerous punctures. Tempora broad, sparsely punctured, shining. Dorsulum of the mesothorax broadly smooth and shining, without punctures in the middle, coarsely but sparsely punctured all round the edges; a finely impressed longitudinal line reaches in the middle from the anterior margin of the mesothorax to the punctured belt in front of the scutellum. This as well as the metanotum (postscutellum) sparsely and coarsely punctured. The cordate area of the median segment is circularly grooved in the centre and there dulled by a coriaceous sculpture, the sides being sparsely and finely punctured. The sides of the median segment are finely punctured. The mesopleurae are sparsely and coarsely punctured throughout; the metapleurae smooth, shiny, and impunctate. Tergites of the abdomen strongly punctured, the punctures aciculate towards the end of the abdomen; the first near the hind margins roundly raised on both sides, the hind margins narrowly smooth, those of the 4th and 5th weakly carinate. The last tergite (6th) ends in the middle in a sharp mucro, on each side of which the margin is angular; this tergite is concave in the middle, the mucro and the angular margin being recurved. The tergites are depressed towards the apex of the abdomen, as in all species of the genus *Allodape*, the sternites of the abdomen are more or less smooth at the basal, and coarsely punctured in the apical part. The 6th or last sternite is in the shape of an equilateral, the sharply pointed apex of which reaches that of the dorsal mucro; the segment has a median longitudinal smooth line. The pubescence of the female is distributed as follows:—Mandibles, labrum, clypeus and face with scanty and short ferruginous hairs. The hairs are longer on the vertex, very scanty on the tempora. The sides and margins of the mesothorax, scutellum, mesonotum, and sides of the median segment bear a pale fulvous pubescence; the mesopleurae and sterna, the coxae and upper side of femora are covered with the same pale fulvous pubescence. The tubercles (scapulae) have a thick fringe of appressed hairs on the apical margin. The tergites bear a short grey pubescence intermixed with short black bristles on the depressed segments; long ferruginous hairs cover scantily the sides of the abdomen and the posterior parts of the sternites, and are very conspicuous on the last sternite. The underside of the femora is smooth, shiny, hairless and concave so as to admit the tibiae. The colour of the hair-brushes of the middle and hind tibiae and metatarsi is bright ferruginous. The wings are smoky, iridescent, with brown nervures. The stigma is long, and light brown in the middle.

Length.—13–16 mm.

♂. The anterior margin of the clypeus is broadly truncate and straight. There is hardly a trace of the facial carinae in the lower face, but the two fine carinae from the lower stemma are parallel and very narrow; the frontal stemma is situated in a shallow impression enclosed by rounded walls. The genae (spaces between mandibles and eyes) are broader than in the ♀, as broad as the length of the third joint of the antennae. The punctation of the body is much the same as in the ♀, but finer. The smooth margins of the 2nd to 5th tergites are pale testaceous. The last tergite and sternite are rounded. The fringe of the apical segments is fulvous. The metatarsi and tarsi of all the legs are light ferruginous in colour with a fulvous pubescence, the hind trochanters have each five short blunt teeth on the inner edge; the basal edge of the hind femur is bluntly triangular.

Length.—13–16 mm.

This is one of the largest of the South African species. The ♀ is readily recognised by the peculiar shape of the last tergite of the abdomen. *Allodape paradoxa*, Brauns, has a similarly shaped dorsal segment, but is only half the size of *A. angulata*. The ♂ can be easily mistaken for the same sex of *Allodape clypeata*, Brauns, and is of the same size.

I am not quite sure whether *Allodape angulata* is the *Allodape mucronata*, Smith. In fact, the description of the latter agrees so very well with my species that I believe it to be the same. However, the colour of the abdomen is different in Smith's species. It may be that he described his species from an immature example. The species seems to be restricted to the western and south-western parts of the Cape Province. The habitats known to me are:—Cape Province: Uniondale (December); Willowmore (October); Cape Town (December). I found the nest inhabited by both sexes in the dry inflorescence stems of an iridaceous plant at Uniondale.

Allodape paradoxa, new sp.

♀. Black; the face in most specimens totally black, sometimes with a more or less distinct longitudinal line of lurid yellow in the centre of the clypeus.

♂. Black, with the face black or with a more or less broad longitudinal median yellow line on the clypeus, sometimes dilated above or below.

♀. Mandibles very scantily punctured. Genae as wide as the length of the pedicel of the antennae. Labrum convex, with a few large punctures. Clypeus somewhat elongate, the oral margin truncate in the middle, sparsely punctured, as is also the lower part of the face between the clypeus and the orbit; separated from the frons on each side by an impressed line, which becomes grooved towards the oral margin of the clypeus. The clypeus as well as the face has an adipose sheen due to an extremely fine unctuous punctation. The twin keel between the antennae is distinct, and reaching neither the clypeus nor the lower stemma; the latter situated in a groove with rounded walls. A fine impressed line runs towards the keel between the antennae. Frons and temples shiny with a few fine scattered punctures; mesonotum with a few scattered punctures in the middle, more closely punctate towards the sides and the scutellum. The latter is dull, sparsely punctured, and like the adjoining belt of mesonotum extremely finely shagreened. Mesonotum with a finely impressed line in the middle and on each side. The cordate area of the median segment is closely punctured, opaque, well defined, and coriaceous. The sides of the median segment are shining. Mesopleurae shining, sparsely punctured, each puncture bearing a hair. First tergite with a rounded tubercle on each side, hardly punctured, but like the following tergites extremely finely shagreened. The other tergites are very finely but sparsely punctured. The shagreened sculpture becomes closer and duller towards the apex of the abdomen. Last tergite concave on each side of the hind margin, angularly produced in the middle, and obtusely and roundly pointed, the extreme point and the side angles being recurved. The sternites are shining, glossy at the basal part, sparsely punctured and setigerous in the apical. The last sternite is trapezoidal, ending in two sharp points, which are curved upwards, covering and overlapping the obtusely pointed last tergite; last sternite sinuate between the points.

The pilosity of this species is scanty on the oral parts, vertex, scutellum, pleurae, sides of abdomen, and basal parts of the legs, and is of a greyish-white colour. The scopa of the hind legs is greyish-white, the hairs of the median and hind metatarsus ferruginous.

Length.—6–7 mm.

♂. The punctation of the male is much the same as that of the female. The main character separating this sex from the other small black species of the genus is the form of the hind femora, which are broadly swollen and enlarged, and rounded at the basal angle. The hind trochanters are not spinose; the hind tibiae are somewhat curved, and enlarged towards the apex; the last tergite is broadly rounded, and hardly sinuate in the middle. Fringe of the top of the abdomen ferruginous. Wings hyaline with iridescent sheen. Stigma and veins piceous. Pubescence greyish.

Length.—5–6 mm.

This species is not common. I found it in August nesting at Port Elizabeth in dry inflorescence stalks of Liliaceae, and also at the same time of the year at Willowmore. The female is easily recognised by the shape of the last abdominal segment; the male by the form of the hind femora.

Allodape ceratinoides, Gribodo.

Bull. Soc. ent. Ital., xvi, 1884, p. 269.

♀. Black; the middle line of the clypeus and the inner orbit from the mandibles up to nearly the height of the lower stemma yellow, the lateral lines nearly of the same width. The hind border of the eyes at the temples with a narrow yellow line. Stigma of the fore-wings luteous.

♂. Black; clypeus and labrum yellow, inner orbit with a yellow line broader at the base and narrowing towards the apex. The line at the temples bordering the hind margin of the eyes is narrow as in the ♀. Stigma of the fore-wings luteous.

♀. Mandibles triangular, smooth with a few scattered punctures. Labrum trapezoidal, deeply and broadly punctured, punctures umbilicate. Clypeus produced, oral margin truncate with a few coarse punctures near the margin. The clypeus as well as the sides of the face evenly but not closely punctured, punctures setigerous. The keel between the eyes is distinct. Vertex on both sides smooth. Occiput more closely punctured, tempora shining, bearing distinct but scattered punctures. Mesothorax smooth in the middle, impunctate, the frontal, lateral and hind parts closely and distinctly punctured. In the middle and on the sides are three abbreviated impressed lines. Scutellum closely and more finely punctured than the mesothorax. Cordate area of the median segment ill-defined, not distinctly separated from the rest of the median segment, smooth and without punctures. Tergites aciculate from the second one and more closely towards the end of abdomen; the punctures setigerous. Sternites sharply punctured in the apical parts; the last is triangular, with a triangular smooth space at the base, and sends a fine carinula to the apex. The pubescence is rich and on some parts villose. The vertex, pleurae and pectus, the margins of the mesothorax and the sides of the median segment, are densely clothed with a bright brown-yellow villosity with a golden sheen in fresh specimens. The metatarsi and the brush of the hind tibiae and tarsi are bright ferruginous with a golden sheen. A conspicuous short velvety brush at the end of the hind tibiae is bright purple. This brush is situated on the external side of the tibiae, and reaches from the apex to past the middle. The pubescence of the ventral part, sides, and apex of the abdomen is scantier, but long and whitish-grey.

♂. Sculpture and pubescence are much the same as in the ♀. Labrum quadrangular, smooth with a few scattered punctures. Basal part of clypeus smooth, hardly punctured. The punctures of the apical clypeus large and dispersed. The hind margins of the last three or four tergites are somewhat raised, smooth, the last rounded. The lower angles of the hind femora are sharply triangular.

The trochanter is provided with a sharp curved tooth on the inner base and a nodiform process towards the base of the femur. The fringe on the end of the abdomen is ferruginous. The pubescence of the legs is of the same bright colour, but not so dense and long as in the female. The purple brush of the external edge of the hind tibiae is conspicuous, but shorter than in the ♀.

Length.—♀ 12 mm., ♂ 9–11 mm.

Though I have not seen the type, I have not the least doubt that this species is the one described by Gribodo. His description is good, and the habitat of the type, Port Elizabeth, is the same as for most of my specimens. It is common along the eastern coast of the Cape Province, where it seems to have a wide range. I found it at Port Elizabeth, George, Knysna, Uniondale, etc. It breeds all the year round in the stem of any plant with a soft pith. I found it nesting in Rubus, and the inflorescence stalks of liliaceous and amaryllidaceous plants. The main character of the ♀ is the size, villosity, and colour. When the colour of the latter is faded it can easily be confounded with related species. The male will be recognised best by the form of the hind trochanter and the angulated base of the hind femur.

I have in the past sent the species to correspondents under the *in litt.* name *A. villosa.*

Allodape hirsuta, new sp.

♀. Black, with a broad yellow longitudinal line in the middle of the clypeus. The inner orbit, the posterior margin of the eyes on the tempora, and a broad transverse band on the scutellum, somewhat bisinuate at the base, are also yellow. Stigma of the fore-wings brown.

♂. Black, the clypeus totally yellow, otherwise with the same yellow markings as the ♀. The inner orbit is more broadly yellow at the base than on the upper part.

The sculpture and punctation of this species is exactly the same as in *A. ceratinoides*, Gribodo. The two species are very closely related, but *A. hirsuta* is of much larger size, and the coloration is constant. The dense villosity of the body and legs is alike in the two species, as well as the bright colour and sheen of the pubescence, including the purple brush of the hind tibiae.

In the ♂ the main characters are also the same as in the same sex of *A. ceratinoides.* The base of the hind femur is sharply and triangularly produced, and the teeth and protuberances of the trochanter are shaped as in *ceratinoides.*

Length.—♀ 12–15 mm., ♂ 12–14 mm.

I found this species nesting at Port Elizabeth under the same conditions and in the same plants as *A. ceratinoides,* but in nests always separated from each other, thus showing that *hirsuta* is a distinct species. I found it also near Knysna. The species seems to inhabit the east coast of the Cape Province, having thus the same range as *A. ceratinoides.* It breeds all the year round.

EXPLANATION OF PLATES.

PLATE XI.

Allodape ceratinoides, Gribodo.

a, Male. *b*, Female. *c*, *d*, *e*, Pupae.
f, *g*, *h*, Pupae enlarged.
i, *k*, *l*, *m*, Full-grown larvae.
n, *o*, *p*, Younger larvae.
q, *r*, Small larvae.
s, *t*, Eggs.

PLATE XII.

Allodape pringlei, Cameron

a, Female, dorsal view.
b, Female, lateral view.
c, Last dorsal segment of male.
d, Head of male.
e, *f*, Pupae.
g, Small larvae.
h, Larger (older) larvae.
i, Full-grown larvae.
k, Pupae, enlarged.
l, Eggs.

8. *On some South African Ichneumonidae in the Collection of the South African Museum.*—By Claude Morley, F.Z.S., F.E.S., Memb. Soc. Entom. de France, etc. Part III.

Recent consignments of Parasitic Hymenoptera have enabled me again to extend our still limited knowledge of the species occurring in Southern Africa, and to supplement my former studies upon them, contained in the Revision of Ichneumonidae and in these Annals, Vol. XV, pp. 353–400, and Vol. XVII, pp. 191–229. As before, a large proportion of the species enumerated is from the interesting district of Zululand, where the insect fauna of the east-central regions merges with that of the more southern parts of the Continent. The lesser proportion of new kinds in the present paper may, I think, be taken as indicative that our knowledge is at length approaching, though still far distant from, perfection. The European Continent and America to the north of Mexico are the only parts of the globe of which we yet possess anything like full accounts of Ichneumonidae : a first volume of the Indian species was published in 1913, and a second awaits nothing but official sanction for its appearance. South Africa may now be regarded as the next forward in this respect, for nothing but isolated accounts have yet been put forth by other countries. The Swedes, however, who have given us a good lead since Holmgren began to publish in 1855, are now contributing much literature on the group. The types of the new species mentioned in the following list are in the South African Museum.

CLASSIFIED CATALOGUE.

ICHNEUMONIDAE.

Ichneumoninae.

JOPPIDES.

Epijoppa, Morl.
  rubricata, Morl.
  fumosa, Morl.
  tricolor, n. sp.
Ischnojoppa, Kriech.
  luteolator, Fab.
Xanthojoppa, Cam.
  lutea, Cam.
  inermis, Morl.
Coelichneumon, Thoms.
  sublunifer, Morl.
  geminifer, Morl.
  globulifer, Morl.
  sulcifer, Morl.

ICHNEUMONIDES.

Oxypygini.

- Melanichneumon, Thoms.
  - *rufator*, Morl.
- Lagenesta, Cam.
  - *duplicator*, Morl.
  - *sinifer*, Morl.
- Leptothecus, Cam.
  - *alutacefer*, Morl.
- Holcichneumon, Cam.
  - *vindex*, n. sp.
- Barichneumon, Thoms.
  - *basiglyptus*, Kriech.
- Ichneumon, Linn.
  - *aethiopicus*, Cam.
  - *leppani*, Cam.

Amblypygini.

- Amblyteles, Wesm.
  - *schonlandi*, Cam.
- Charitojoppa, Cam.
  - *thoracica*, Morl.

Listrodromini.

- Anisobas, Wesm.
  - *ruficeps*, Cam.
- Neotypus, Forst.
  - *gravidus*, sp. n.

Platyurini.

- Ctenochares, Forst.
  - *blandita*, Tosq.
  - *testacea*, Szepl.
  - *striolata*, Cam.
- Platylabus, Wesm.
  - *testaceus*, Morl.
  - *vallatus*, Morl.
  - *hemierythraeus*, Morl.
  - *opaculus*, Thoms.
  - *ceta*, Morl.
  - *phorcys*, Morl.

Cryptinae.

PHYGADEUONIDES.

Hemitelini.

- Lienella, Cam.
  - *annulata*, Cam.
  - *canaliculata*, Cam.
  - *quadriannulata*, Cam.
- Caenopimpla, Cam.
  - *crassa*, sp. n.
- Hemiteles, Grav.
  - *nigrescens*, nom. n.
  - *pulchrator*, nom. n.
  - *testaceator*, nom. n.
  - *tunisiae*, nom. n.
  - *tisisthenes*, sp. n.
  - *aestivalis*, Grav.
  - *laevigatus*, Ratz.

CRYPTIDES.

Mesostenini.

- Goryphus, Holmgr.
  - *scutellator*, sp. n.
  - *testaceus*, Morl.
  - *caviclypeus*, sp. n.
  - *corniger*, Morl.
  - *lineiger*, sp. n.
  - *visulcatus*, Morl.
  - *cinctitibia*, Morl.
  - *parvidens*, Cam.
  - *aello*, Morl.
- Mesostenus, Grav.
  - *denticlypeus*, Morl.
  - *edenticlypeus*, sp. n.
  - *rhodesiae*, Cam.
  - *albilabris*, Cam.
  - *octans*, Morl.

Mesostenini—*continued.*

- Mesostenus, Grav.
  - *leptonotus*, Cam.
  - *oneili*, Cam.
  - *albipalpis*, Cam.
  - *protervus*, Tosq.
  - *agnatus*, Tosq.
  - *festivus*, Tosq.
  - *vulpio*, Tosq.
  - *ensator*, Thunb.
  - *testacellus*, sp. n.
- Stenaraeus, Thoms.
  - *laevifrons*, Cam.
  - *lightfooti*, Cam.
- Listrognathus, Tschek.
  - *bifrontalis*, sp. n.

Cryptini.

- Etha, Cam.
  - *castanea*, Morl.
- Stictocryptus, Cam.
  - *petiolaris*, Morl.
  - *testaceus*, Cam.
- Cryptus, Fab.
  - *perturbator*, Schulz.
  - *rufoplagiatus*, Cam.

Pimplinae.

PIMPLIDES.

Pimplini.

- Hemipimpla, Sauss.
  - *bifasciata*, Morl.
  - *calliptera*, Sauss.
  - *superba*, Szepl.
- Pimpla, Fab.
  - *spiloaspis*, Cam.
  - *crocata*, Tosq.
  - *melanospila*, Cam.
- Theronia, Holmgr.
  - *melanocera*, Holmgr.

Glyptini.

- Sjostedtiella, Szepl.
  - *vittinotum*, sp. n.
  - *erythrostoma*, sp. n.
  - *nigritornata*, Cam.
  - *unirufa*, sp. n.

LISSONOTIDES.

- Syzeuctus, Forst.
  - *fulvipalpis*, Cam.
  - *annulatus*, Brulle.
  - *spilostoma*, Cam.
  - *interstitialis*, Cam.
  - *bisannulatus*, sp. n.
- Asphragis, Forst.
  - *flavidorbitalis*, Cam.
  - *rufipes*, Cam.
  - *straminea*, sp. n.
- Lissonota, Grav.
  - *deversor*, Grav.

ACAENITIDES.

- Acronus, Tosq.
  - *enderleini*, Schulz.
  - *saliiformis*, Enderl.
- Ctenotoma, Cam.
  - *ruficeps*, Cam.
- Paracollyria, Cam.
  - *flavipennis*, Cam.
  - *ruficollis*, Cam.
- Phaenolobus, Forst.
  - *flavus*, Rom.

BANCHIDES.

TEGONA, Morl.
discreta, Morl.

TRYPHONINAE.

METOPIIDES.

METOPIUS, Panz.
discolor, Tosq.

TRYPHONIDES.

PERILISSUS, Holmgr.
  semifulvator, n. sp.
ERROMENUS, Holmgr.
  fumipennis, sp. n.
PRIONOPODA, Holmgr.
  testaceoides, sp. n.
CTENOPELMA, Holmgr.
  ligulata, sp. n.

Ophioninae.

CREMASTIDES.

CREMASTUS, Grav.
  annulicornis, Tosq.
  geminus, Grav.
  testaceus, Szepl.
  pallidus, Kriech.
  noxiosus, Morl.
PIMPLOMORPHA, Cam.
  trilineata, Cam.

CAMPOPLEGIDES.

XANTHOCAMPOPLEX, Morl.
  flavescens, Morl.
CAMPOPLEX, Grav.
  erythrospilus, Cam.
  crassicaput, n. sp.
NEPIERA, Forst.
  concinna, Holmgr.
ANGITIA, Holmgr.
  apostata, Grav.
RHIMPHOCTONA, Forst.
  bolibasis, sp. n.

ANOMALIDES.

TRICHOMMA, Wesm.
albicoxa, Morl.

OPHIONIDES.

NOTOTRACHYS, Marsh.
  nirvana, sp. n.
  bidentata, Cam.
  callicrates, nom. n.
  ferruginea, Cam.
  flavomaculata, Cam.
  foliator, Fab.
  nigricans, Cam.
  rufidens, Cam.
  rufipes, Cam.
  tisisthenes, nom. n.
EURYOPHION, Cam.
  superbus, Morl.
  nebulifer, n. sp.
PLEURONEUROPHION, Ashm.
  pruinosus, Cam.
HENICOSPILUS, Steph.
  bisimpressus, Brulle.
  rubens, Tosq.
OPHION, Fab.
  discinervis, sp. n.
EURYCAMPTUS, Morl.
  latipennis, Kirb.

PANISCIDES.

Paniscus, Schr.
testaceus, Grav.
aethiopicus, Szepl.
melanocotis, Holmgr.

MESOCHORIDES.

Mesochorus, Grav.
nox, sp. n.

Family **ICHNEUMONIDAE.**

Subfamily **Ichneumoninae.**

Tribe JOPPIDES.

Epijoppa, Morl.

Revis. Ichn., iv, 1915, p. 49.

Epijoppa rubricata, Morl.

Loc. cit., p. 53.

♂. Very similar, especially in its structure of face and clypeus, to the ♀ but with internal orbits broadly white from clypeal base to level with apical ocellus ; anus, base of ventral plica and centre of mandibles, also white. Metathorax somewhat closely punctate with the laterally carinate areola smooth and glittering, and the external areae striate to the obsolete costulae. Hind legs infuscate, with griseous tibial pilosity. Wings slightly and evenly flavescent throughout. Length, 11 mm.

M'fongosi in Zululand during December 1910, captured by Mr. W. E. Jones. The species of this genus range throughout the warmer regions of the Continent.

Epijoppa fumosa, Morl.

Loc. cit., p. 51.

A large ♀ from Salisbury in September 1913. This species is now known from Nyassaland, Rhodesia, and Mashonaland.

Ischnojoppa, Kriech.

Ent. Nachr., xxiv, 1893, p. 32.

I. luteolator, Fab.

E.S. Suppl., 1798, p. 222.

Found by Dr. L. Péringuey at Knysna in Cape Colony during October 1916.

Epijoppa tricolor, sp. nov.

A stout red species with the mandibular base, frontal and temporal orbits, small callosity before radices, postscutellum, apical margin of all the segments except third and centre of second, coxae except centre of hind ones beneath, anterior tibiae externally and apices of their femora, pure white; tegulae, fourth and following segments, venter, mesosternum, stigma, hind trochanters and centre of their coxae, black. Metathorax distinctly punctate, with areola strongly transverse and costulae conspicuous; face not sulcate; clypeal tooth small but acute. Length, 10 mm. Female only.

This species agrees with the Nigerian *E. rubricata*, Morl., in its hyaline wings, rufescent mesonotum, antennae, and legs; though differing in the white postscutellum, red metathorax, flagellar apices and abdominal base, as well as in the above sculpture. The type occurred at Bulawayo in Southern Rhodesia during May 1917, to R. W. Tucker.

Tribe ICHNEUMONIDES.

Subtribe Oxypygini.

Gen. Melanichneumon, Thoms.

Opusc. Entom., xviii, 1893, p. 1954.

Melanicheneumon rufator, Morl.

Ann. S. Afr. Mus., xv, 1916, p. 363.

♂. Differs from the ♀ in having the antennae setaceous and discally infuscate, with the flagellar joints subset and the six central ones, like the palpi, front coxae, line before and callosity below radices, the sides of scutellum basally, and whole anus, white. Length, 7 mm. This androtype was captured during March 1917, by W. E. Jones, at M'fongosi, Zululand.

Gen. Holcichneumon, Cam.

Ann. Mus. Transvaal, ii, 1911, p. 175.

Holcichneumon vindex, sp. nov.

A dull black and somewhat stout species with the scutellum, mesonotum, and propleurae sanguineous-red; head, antennae, mesosternum, metanotum, segmental apices and coxae, partly white.

Head discally subglobose, buccate behind and below the eyes; palpi mandibular base, external and frontal orbits, with whole face and clypeus except a longitudinal line on former, white; clypeus deplanate, apically truncate and basally not discreted. Antennae setigerous and apically subserrate, with seven central joints and a dot beneath scape, white. Thorax stout and not closely punctate, with notauli short; mesonotum and upper part of propleurae subnitidulous and bright red; two small lines at the wanting sternauli, a triangle on metanotum consisting of a line through areola and apically traversing the wanting apophyses, and a dot before the linear spiracles, white; areola subparallel-sided with no basal area, emitting distinct costulae from its centre. Scutellum bright red, strongly deplanate and nitidulous with sparse punctures, and laterally strongly carinate except at its extreme apex, which is, like the postscutellum, white. Abdomen fusiform and dull, with the two or three basal segments aciculate; anus, apices of sixth segment broadly, of fifth very narrowly, and of the three basal ones more broadly at their sides, white; postpetiole abruptly explanate, centrally finely aciculate, with a few lateral punctures. Legs black and not stout; anterior internally, with their coxae beneath mainly, and a spot above hind ones, white. Wings very slightly infumate; stigma, tegulae and nervures black; basal nervure continuous; areolet triangular, coalescent above and emitting the bifenestrate recurrent nervure from its centre. Length, 14 mm. Male only.

I do not know *Camarotella madagascarensis*, Szepl., Bull. Mus. Paris, ix, 1904, p. 336, which also possesses margined scutellum. The type was found at M'fongosi in Zululand during March 1917, by W. E. Jones.

Gen. BARICHNEUMON, Thoms.

Opusc. Entom., xviii, 1893, p. 1959.

Barichneumon basiglyptus, Kriech.

Ichneumon basiglyptus, Kriech., Entom. Nachr., 1890, p. 294, ♀; Berth., Ann. Soc. Entom. France, 1895, p. 557, ♀♂; *Barichneumon basiglyptus*, Morl., Ichn. Brit., i, 1903, p. 91, ♀♂.

A male has been found during 1914 by E. Fry at Eldoret in British East Africa, doubtless imported with some Microlepidoptera from Europe, where it is known from Britain to Savoy.

Gen. ICHNEUMON, Linn.

Syst. Nat., ed. 10, i, 1758, pp. 343 and 360.

Ichneumon aethiopicus, Cam.

Stenichneumon ? aethiopicus, Cam. Records Albany Mus., i, 1905, p. 229, ♂.

A homotype, sent me by Dr. L. Péringuey, and taken at Kimberley by Mr. J. H. Power during 1912, is a genuine species of Ichneumon, *sensu* Thomson; another ♂ was found by R. M. Lightfoot at 4500 feet during November 1916 at Great Winterhoek, near Tulbagh, in the Cape Province.

Ichneumon leppani, Cam.

Lib. cit., p. 226, ♀.

The type of this species, simply labelled "Miss Leppan, 1897," is closely allied to *Ichneumon vulneratorius*, Zett. (Ins. Lapponica, p. 364), which I have recently examined from the Kola Peninsula of Northern Russia.

Subtribe AMBLYPYGINI.

Gen. AMBLYTELES, Wesm.

Act. Ac. Bruxelles, xviii, 1845.

Amblyteles schonlandi, Cam.

Ichneumon schonlandi, Cam. Records Albany Mus., i, 1905, p. 227, ♂.

The type is certainly an *Amblyteles*, closely allied to *A. glaucatorius*, Fab.

Gen. CHARITOJOPPA, Cam.

Ann. Nat. Hist., vii, 1901, p. 383.

Charitojoppa thoracica, Morl.

Ann. S. Afr. Mus., xvii, 1917, p. 200, ♂.

♀. This sex differs slightly from the ♂ in having the head black, with the occiput, vertex, and frons to juxta-scrobal orbits red (an unusual combination of colour) or entirely red; not stramineous-marked. Antennae black, hardly explanate before their very strongly attenuate apices; and five central joints white above. Pro- and meta-thorax concolorous with abdomen, but not pale-marked; metapleurae rarely red; costulae obsolete. Scutellum not apically paler. Abdomen, like that of the ♂, cyaneous with apices of all the segments, but third and fourth, stramineous. Anterior legs not white-marked, their tibiae indefinitely rufescent. Length, 13–14 mm.

Found in the same locality as the ♂, during March and April 1917, by W. E. Jones.

Subtribe LISTRODROMINI.

Gen. ANISOBAS, Wesm.

Nouv. Mem. Ac. Bruxelles, 1844, p. 111.

Syn.: *Spanophatnus*, Cam.

Records Albany Mus., i, 1905, p. 230.

Anisobas ruficeps, Cam.

Spanophatnus ruficeps, Cam. Records Albany Mus., i, 1905, p. 231, ♂.

An examination of the type, whose tarsal claws are not pectinate, establishes the synonymy of these genera.

Gen. NEOTYPUS, Forst.

Verh. pr. Rheinl., 1868, p. 194.

Neotypus gravidus, sp. nov.

♀. A not unusually short species, convex, bright brick-red, with palpi, anus, flagellar band and anterior legs internally, alone white; the head mainly, abdomen broadly in the centre and legs except basally, black. Head as broad as thorax and posteriorly as broad as the eyes; occiput shining and somewhat deeply punctate; frons smooth with its base alone punctate, its immaculate orbits elevated but not higher than eyes; face deplanate and indefinitely red, closely and evenly punctate, continuous with the stout and rufescent clypeus; cheeks elongate and buccate, labrum exserted; mandibles not stout, jowls rufescent. Antennae elongate and slender, centrally white-banded and apically strongly attenuate. Thorax very stout, but shorter than abdomen, deeply and closely punctate, red with only frenum and petiolar area nigriscent; notauli wanting; petiolar area deeply impressed and occupying one-third of metanotum; all other areae wanting; lateral carinae weak, spiracles large and linear; apophyses wanting. Scutellum obsoletely punctate, strongly nitidulous and margined throughout; postscutellum obsolete. Abdomen elongate-ovate and black, with anus from base of fifth segment white, and the obsoletely punctate first segment entirely red; second segment longitudinally punctate-striate, with very broad and deep gastroceli; terebra black and shortly exserted; hypopygium small and not produced. Legs normal, with coxae and trochanters alone red; all tarsal claws strongly pectinate; hind tarsi desunt. Wings neither small nor broad, hyaline with apex of the sinuate radial nervure and the sinus indefinitely infumate; stigma and nervures, radix and tegulae black; lower basal nervure postfurcal; areolet not higher than broad, laterally subcoalescent above. Length, 13 mm.

The type is labelled "Mahila R, Kapie River, May 1912 (Rhodesia Museum)."

Subtribe PLATYURINI.

Gen. CTENOCHARES, Forst.

Verh. pr. Rheinl., xxv, 1868, p. 191.

Ctenochares blandita, Tosq.

Mem. Soc. Ent. Belg., 1896, p. 72; Morl., Ann. S. Afr. Mus., 1916, p. 370.

Taken by W. Haygarth at Durban in Natal during 1914.

Ctenochares testacea, Szepl.

Kil.-Meru Exped., 1910; Morl., Ann. S. Afr. Mus., 1916, p. 370.

Females were captured by Bell-Marley during 1915 at Howick in March and at Stella Bush in Natal.

Ctenochares striolata, Cam.

Brachycoryphus ? striolatus, Cam. Records Albany Mus., i, 1905, p. 236, ♂.

An examination of an homotypical female, which differs only sexually from Cameron's male description, sent by Dr. L. Péringuey, convinces me that this species must be placed in *Ctenochares* and not among the *Mesostenini*, as was done by its author. The black terebra barely extends beyond the abdominal apex.

Gen. Platylabus, Wesm.

Nouv. Mem. Ac. Bruxelles, xviii, 1844, p. 150.

Platylabus testaceus, Morl.

Ann. S. Afr. Mus., xvii, 1917, p. 204, ♂♀.

Two more females have been captured at M'fongosi in Zululand during April and May 1917.

Platylabus vallatus, Morl.

Ann. S. Afr. Mus., xv, 1916, p. 370, and xvii, 1917, p. 204, ♂.

♀. Differs from the ♂ mainly in its scarlet-red, in place of testaceous, coloration. Head with the occiput, clypeus, cheeks, centre of frons and of face red. Antennae filiform, and subcompresso-dilated before their attenuate apices; red with the fifth to seventh joints, and their apices (beyond the nine-jointed white band) black. Mesonotum with three indefinite black vittae, its disc not stramineous-marked; areola subcircular and apically truncate. Abdomen elongate-fusiform and, like the legs, unicolorous red. Length, 11 mm.

M'fongosi in Zululand during May 1917; and Cape Town in 1913.

Platylabus opaculus, Thoms.

Platylabus pedatorius, varr. 1 and 1*b*, Wesm., Bull. Ac. Belg., xv, pt. 1, 1848, p. 309: Mant. 72.

P. opaculus, Thoms., Ann. Soc. Ent. France, viii, 1888, p. 124; Opusc. Entom., xix, 1894, p. 2108, and xxi, 1896, p. 2044; Berth., Ann Soc. Ent. France, lxv, 1896, p. 322; Schm. Opusc. Ichn., iii, 1903, p. 236, ♂♀.

A female of this black and coarsely sculptured species was captured in Natal by A. Marshall during 1893. Its introduction was doubtless accidental and its establishment improbable.

Platylabus phorcys, Morl.

Loc. cit., p. 202.

A colour form of the male, with metathorax entirely black, was found with *P. ceta* above during May 1917.

Platylabus hemierythraeus, Morl.

Lib. cit., xv, 1916, p. 380.

The male differs slightly from the female in having the abdomen subparallel-sided and testaceous with only the valvulae, fifth, sixth, and base of seventh segments black. Two males occurred at Salisbury in Southern Rhodesia during May 1917, to R. W. Tucker.

Subfamily **Cryptinae.**

TRIBE PHYGADEUONIDES.

Subtribe HEMITELINI.

Gen. LIENELLA, Cam.

Trans. S. Afr. Phil. Soc., xv, January 1905, p. 196; Cam., Records Albany Mus., i, April 1905, p. 246; Cam., Ann. S. Afr. Mus., v, 1906, p. 155.

Lienella annulata, Cam.

Ann. Mus. Transvaal, ii, 1911, p. 179, ♂.

♂♀. Black, with no red markings; abdomen striate and wings unifasciate. Palpi, ligula, trochanters, anterior tibiae and in ♂ tarsi, base of hind tibiae and in ♂ their calcaria, radix and tegulae, white; scape at least beneath and flagellar base, ♂ mandibles and remainder of anterior legs, testaceous. First and basal half of second segments coriaceous-striate, ♀ also with basal half of two following segments striate and remainder smooth; gastrocoeli large and nitidulous; second and third ♀ segments centrally transimpressed. Flagellum of ♂ setaceous, rather shorter than body and 23-jointed; of ♀ filiform, basally attenuate, half length of body and 20-jointed. Wings hyaline and not narrow, with nigrescent fascia from stigma to apex of recurrent nervure, and in ♀ slightly infumate around lower basal nervure; terebra deflexed, stout and three-fourths length of basal segment. Length (5 mm., *teste* Cam.), ♂♀ 7–7½ mm.

The female is new, and was captured at Pinetown in Natal on 4th November 1916 by H. W. Bell-Marley; I have seen a male, taken by W. E. Jones, during March 1917, at M'fongosi in Zululand.

Lienella canaliculata, Cam.

Ann. S. Afr. Mus., v, 1906, p. 155, ♂.

Two males from M'fongosi, in Zululand, during March and April were taken by W. E. Jones.

Lienella quadriannulata, Cam.

Ann. S. Afr. Mus., v, 1906, p. 157, ♀.

The peculiar striate sculpture and elongate pilosity render this species distinct. The colour of both body and wings is variable; I have seen a female, captured by J. C. Swierstra on 12th November 1903 at Fountain Grove in the Pretoria district, with only the mandibular apices, part of coxae, of hind femora and of their tibiae and their tarsi, and the third and fourth segments black; the alar fascia confined to base of radial and apex of discoidal cells, with no infumation at the lower basal nervure as in the type. The second and third segments are centrally transimpressed.

Gen. Caenopimpla, Cam.

Mem. Manchester Phil. Soc., 1900, p. 99.

Acanthoprymnus, Cam., Entomologist, 1905, p. 249.

Camptolynx, Cam., Berl. Ent. Zeit., lv, 1910, p. 252.

Caenopimpla crassa, sp. nov.

♂. A dull, rich red species with black markings and the wings slightly infumate with a black subapical fascia. Head black, coarsely and irregularly reticulate; face and clypeus discreted and closely punctate with apex of latter truncate, margined and centrally foveate; mandibles weak, fulvous and nearly smooth; palpi pale testaceous. Antennal scape and first flagellar joint red (reliquae desunt). Thorax stout, broad, shining and punctate-transstriate, with only prothorax apically and metasternum black; notauli and a central mesonotal sulcus deeply impressed; sternauli deep and half mesopleural length; metathorax with entire and very strong areae, but petiolar not discreted; basal area and areola broader than long, with costulae of latter slightly behind its centre; lateral carinae weak, spiracles circular. Scutellum subconvex, deeply and confluently punctate, not laterally margined, with its basal fovea broad and sex-carinate; postscutellum obsolete. Abdomen elongate-ovate, short and broader than thorax; second and third segments very coarsely and longitudinally punctate-striate, centrally deeply transimpressed and, except apically, black; apex of third truncate and white, with acute concolorous lateral spines; remaining segments, obsolete and concealed beneath third, nigrescent, with membrane and valvulae whitish; basal segment stout, broad and quadricarinate, with its central sulcus deep and stoutly transstriate. Legs slender and not elongate; testaceous with anterior coxae and trochanters, hind tibiae and tarsi, nigrescent; hind coxae and femora black, with basal third of their tibiae pure white. Tegulae and base of the black stigma very pale testaceous; lower basal nervure antefurcal and sub-infumate; nigrescent fascia extending from base of radial nervure and apex of stigma to anal nervure and slightly beyond the bifenestrate recurrent; nervellus elongately antefurcal and intercepted at its lower fourth. Length, 7 mm. ♂ only.

The type was found during February 1917, at M'fongosi in Zululand, by W. E. Jones. It is very similar to the common Bengalese *C. striata* though stouter, with the whole sculpture coarser and metathoracic areae more definite.

Gen. Hemiteles, Grav.

Ichn. Europ., ii, 1829, p. 781.

Fourteen species still stand in this genus among the African fauna, though some of them probably belong to allied genera. The following rectifications are requisite:—*H. nigrescens*, Morl., nom. nov. =*H. nigricans*, Burgst., Tunis. Hym., 1913, p. 24, ♀ (*nec* Prov. 1882); *H. pulchrator*, Morl., nom. nov.=*H. pulcherrimus*, Szepl., Kil.-Meru Exped., 1910, p. 73 (*nec* Cam. 1904); *H. testaceator*, Morl., nom. nov.=*H. testaceus*, Szepl., Kil.-Meru Exped., 1910, p. 74 (*nec* Szepl., Leiden Mus., 1908); *H. tunisiae*, Morl., nom. nov. =*H. elongatus*, Burgst., Tunis. Hym., 1913, p. 25 (*nec* Fonsc. 1852, *non* Ratz.).*

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* It must be noted that Szepligeti's paper upon the *Ichneumonidae* of the Kilimandjaro-Meru Expedition was not *published* until 1910. The distribution of author's separata before that date has led to some confusion; these bear the date of printing—not of publication—" August 1907"; and it has been variously quoted as 1907 by Roman in the Entomologisk Tidskrift of 1910, and as 1908 in the Zoological Record. It must be retained as 1910. This distribution before publication is a reprehensible practice, and some of Roman's names are in danger of taking priority over those he criticises. Much of the material collected by this Expedition yet remains to be worked, though all the larger museums of Europe contain unnamed African Ichneumonidae; and not the least is the mass now lying in the British Museum, consisting of thousands of specimens from all parts of the Ethiopian continent.—Claude Morley.

Hemiteles tisisthenes, sp. nov.

♂. Bright testaceous species with mandibular apices, flagellum and anus alone black; abdomen striate; alar apices infumate. Head as broad as thorax, not constricted behind the prominent eyes, dull with vertex and frons striate; face and clypeus not discreted, granulose punctate, with latter apically rounded mutic. Antennae slender, setaceous and nearly as long as body. Thorax transaciculate and dull with notauli and a central mesonotal sulcate deep and entire; sternauli broad and half mesopheural length; metathorax shining and irregularly punctate, with areae fine and entire; areola hexagonal, rather longer than broad, emitting costulae from near its base; petiolar area concave, shining and discreted, with strong basal carina; spiracles small and circular. Scutellum subconvex, coarsely punctate and only basally margined. Abdomen as long as head and thorax, not broad; basal segment gradually explanate throughout, smooth, bicarinate and apically striate; second and third large, coarsely striate throughout and not transimpressed; remainder small, shining, black and pilose, with small valvulae. Legs slender with only the hind calcaria and tarsi infuscate. Wings distinctly flavescent and apically infumate, with basal nervure continuous; nervellus antefurcal, intercepted at its lower third, through median, and stigma testaceous. Length, 7 mm. ♂ only.

Taken by W. E. Jones, during April 1917, at M'fongosi in Zululand.

Hemiteles aestivalis, Grav.

Ichn. Europ., i, 1829, p. 712, and ii, 1829, p. 805; Taschenberg, Zeits. Ges. Nat., xxv, 1865, p. 129; Thomson, Opusc. Entom., x, 1884, p. 988; Schmiedeknecht, Opusc. Ichn., xi, 1905, p. 856; Morley, Ichn. Brit., ii, 1907, p. 165, ♂♀.

An abundant European species, though its hosts are somewhat uncertain. One male, doubtless imported, was captured for the first time in Africa, at Cape Town, by R. M. Lightfoot, during 1913.

Hemiteles laevigatus, Ratz.

Ichn. d. Forst., ii, p. 128; Morley, Ichn. Brit., ii, 1907, p. 152.

One male, differing in no essential way from palaearctic examples, of this species, which has not before been noted in any part of Africa, was captured at Knysna in Cape Province during October 1916, by L. Péringuey.

Tribe CRYPTIDES.

Subtribe Mesostenini.

Gen. Goryphus, Holmgr.

Eug. Resa. Insect., 1868, p. 398.

Goryphus scutellator, sp. nov.

♀. A dull black species with white markings, and whole thorax red. Head transverse with frons striate and centrally carinate ; face and clypeus closely punctate and discreted, the latter subconvex and nearly circular, with apex broadly rounded ; mandibles stout, punctate and apically equally bidentate ; ligula testaceous and palpi rather darker. Antennae slender and filiform, apically sub-attenuate, with the fifth to ninth joints discally pure white. Thorax coriaceous and red, with only prothorax nigrescent beneath ; notauli deep and sternauli nearly entire ; metathorax reticulate-punctate, with both transcarinae weak but entire ; basal area sub-quadrate, apiphyses wanting, spiracles circular. Scutellum coarsely punctate, sub-nitidulous, laterally margined to near apex, and discally elevated in centre. Abdomen evenly and very closely punctate, not red-marked ; seventh, eighth, and apical fourth of the second segment pure white ; basal segment smooth and shining, with disc of the postpetiole linearly depressed and punctate ; terebra deflexed and fully length of first segment, with sheaths apically sub-explanate. Legs black and not white-marked with anterior indefinitely testaceous, especially beneath. Wings clear hyaline ; radix and tegulae red, stigma except its whitish base and the nervures black ; lower basal nervure antefurcal ; areolet quadrate, not very small and not angled below, emitting the broadly unifenestrate recurrent from very slightly beyond its centre. Length, 11 mm. ♀ only.

M'fongosi in Zululand during March 1917, W. E. Jones.

Goryphus caviclypeus, sp. nov.

♂. A shining black species with white markings, and whole thorax red. Extremely closely allied to the above female in its antefurcal lower basal nervure and coloration ; but very certainly distinct in the short, broad, and not discreted but apically concave clypeus, which, with the whole face and palpi and genal marks, is pure white ; scape red beneath and the flagellar band wanting ; thorax shining and more distinctly punctate, with no apical metanotal transcarina ;

scutellum smooth, with large punctures, deplanate, and not laterally margined; abdomen linear with apex of the finely punctate and linear basal segment, and those of all the following ones narrowly white, as also are the anterior trochanters and inner side of their femora and tibiae; areolet quadrate, small and angled below, emitting recurrent from its basal third. Length, 9 mm. ♂ only.

M'fongosi in Zululand during March 1917, W. E. Jones.

Goryphus corniger, Morl.

Ann. S. Afr. Mus., xvii, 1917, p. 206, ♀.

Taken during 1917 by J. G. Carnegie at Fort Napier in Natal. One ♀ at Bindura, Southern Rhodesia, November 1917.

Goryphus lineiger, sp. nov.

♂. A testaceous and very finely punctate species, with the stigma, nervures, head except testaceous centre of face and flavidous clypeus with most of mandibles, the flagellum except basally, abdomen except apices of first five segments, posterior and apices of front tarsi, hind calcaria and whole disc of their tibiae, black; sternum and palpi stramineous. Extremely similar to *G. testaceus* (Ann. S. Afr. Mus., xv, 1916, p. 375), and agreeing therewith in sculpture, excepting the smooth and strongly nitidulous clypeus and irregulur areolet with obsolete external nervure of the present species. Length, 6 mm. ♂ only. The type occurred to W. E. Jones during April 1917 at M'fongosi in Zululand.

Goryphus bisulcatus, Morl.

Loc. cit., xv, 1916, p. 373, female.

Male. A specimen taken at Bindura in South Rhodesia during 1913, I tentatively place as the alternate sex of this Orange River species. From the female it differs in the strongly elongate body, in the black head which is white below the antennae as well as at the frontal and outer orbits, and in the discal black streak from base to apex of the metathorax. Length, 9 mm.

Goryphus cinctitibia, Morl.

Loc. cit., xvii, 1917, p. 206.

A couple of females have been found at Salisbury in Rhodesia during May 1917, by R. W. E. Tucker.

Goryphus parvidens, Cam.

Mesostenus parvidens, Cam., Ann. S. Afr. Mus., v, 1906, p. 149.

The female type in the South African Museum belongs to the present genus. Another female was found at M'fongosi in Zululand during April 1917, by W. R. Jones.

Goryphus aello, Morl.

Loc. cit., xvii, 1917, p. 208.

A small female of only $6\frac{1}{2}$ mm. was captured at Kranzkop in Natal during November 1917, by K. H. Barnard.

Gen. MESOSTENUS, Grav.

Ichn. Europ., ii, 1829, p. 750.

Essential Characters.—Body not metallic; upper basal nervure not antefurcal; metathoracic spiracles elongate, never ovate; clypeus not reflexed; alar areolet entire or sub-entire; frons not cornute, at most centrally carinate; mandibular teeth of sub-equal length, apophyses small but usually distinct; metanotum bitranscarinate. The forty species already standing under this genus in Africa are by no means homogeneous and need revision, which is very dangerous work in the absence of types. Especially with *Goryphus* are they mixed. The more southern kinds may be thus roughly tabulated:

(4) 1. Scutellum and body testaceous, former not or finely punctate.
(3) 2. Abdomen not black; clypeus elongately dentate . *denticlypeus*, Morl.
(2) 3. Abdomen black-marked; clypeus not dentate . *edenticlypeus*, sp. n.
(1) 4. Scutellum red and more or less coarsely punctate.
(18) 5. Thorax not at all white-marked.
(13) 6. Abdomen for the most part black.
(10) 7. Legs black, anterior suffused with testaceous.
(9) 8. Hind tarsi immaculate black . . . . . *rhodesiae*, Cam.
(8) 9. Hind tarsi white-banded . . . . . . *albilabris*, Cam.
(7) 10. Legs mainly red.
(12) 11. Hind tarsi white-banded . . . . . . *octans*, Morl.
(11) 12. Hind tarsi not white-banded . . . . . *leptonotus*, Cam.
(6) 13. Abdomen for the most part red.
(17) 14. Cape Colony.
(16) 15. Frons not carinate; 4th segment white; terebra $\frac{7}{8}$ of abdomen *oneili*, Cam.
(15) 16. Frons carinate; 4th segment red; terebra $\frac{1}{2}$ of abdomen *albipalpis*, Cam.
(14) 17. Guinea . . . *fulvaster*, Tosq.: Delagoa . . . *protervus*, T.
(5) 18. Pronotum and sometimes metapleural marks white.

(20) 19. Postscutellum white . . . . *agnatus*, Tosq.
(19) 20. Postscutellum not white.
(22) 21. Hind legs red, only tarsi infuscate . . . . *festivus*, Tosq.
(21) 22. Hind legs nigrescent throughout . . . . *vulpio*, Tosq.

Types of both sexes show *M. elizabethae*, Cam., to be the ♀ of *M. albipalpis*, Cam.; the distinctions of the table (Ann. S. Afr. Mus., v, 1906, p. 145) are very slight and not specific. *M. mimeticus*, Cam. (Records Albany Mus., i, 1905, p. 250) = *M. oneili*, Cam. (*lib. cit.*, i, 1904, p. 143), and *M. basimacula*, Cam. (*loc. cit.*, i, 1905, p. 249), is its ♂. *M. juvenilis*, Tosq. (Mem. Soc. Ent. Belg., v, 1896, p. 214, ♀), must be called *M. ensator*, since Roman (Zool. Bidr. fr. Uppsala, i, 1912, p. 253) has proved *Ichneumon ensator*, Thunberg. (Mem. Acad. Sc. Petrograd, viii, 1822, p. 259, and ix, 1824, p. 306) to be synonymous. *M. laevifrons*, Cam., and *M. lightfooti*, Cam., of 1906, are both *Stenaraeus*. *M. parvidens*, Cam., 1906, is a *Goryphus*, and I have seen the type.

Mesostenus edenticlypeus, sp. nov.

♀. A somewhat slender, rich testaceous, dull species with the head, antennae, onychii, disc of sixth and seventh segments, and terebra deep black; face, mouth, cheeks, all the orbits broadly, flagellar band and second to base of fourth hind tarsal joints, white. Extremely like *M. denticlypeus* and differing only in having the head but little buccate and posteriorly narrower than the eyes; the clypeus simple, transverse and apically truncate; the thorax and scutellum very closely punctate and not at all shining, laterally finely margined to apex; terebra not longer than half abdomen; and the lower basal nervure is distinctly antefurcal. Length, 10–11 mm. ♀ only.

Taken at M'fongosi in Zululand by W. E. Jones during March and May 1917.

Mesostenus testacellus, sp. nov.

A shining, small and clear testaceous species, with only the mandibular apices and most of flagellum black; the latter slender and attenuate at both extremities, with a broad and somewhat flattened white band immediately before apex; frontal orbits also broadly and definitely white. Head broad with eyes very prominent and occupying its whole sides; frons obsoletely transaciculate; clypeus triangularly prominent, basally discreted and apically subtruncate. Thorax narrow with notauli extremely deep, crenulate and entire; sternauli fine, semilunar and half mesopleural length; metanotum discally deplanate and shagreened, with no basal transcarina; apical transcarina fine, entire and nearly straight; petiolar area short and subvertical, apophyses wanting, spiracles extremely small. Scutellum deplanate, obsoletely sculptured, sub-elongate and laterally margined throughout. Abdomen narrowly fusiform and obsoletely shagreened; basal segment gradually explanate throughout and evenly aciculate; terebra straight, testaceous and two-thirds abdominal length. Legs elongate and very slender, with the stout onychii alone nigrescent. Wings narrow and flavescent-hyaline, with radix and tegulae testaceous, and stigma paler; nervure infuscate with the basal continuous, discoidal and second recurrent quite straight; areolet nearly rectangular, half as broad again as high, apically pellucid, emitting the unifenestrate second recurrent from its basal third; nervellus strongly postfurcal and centrally intercepted. Length, 6–7 mm. ♀.

Found by W. E. Jones during April and May 1917 at M'fongosi in Zululand. With it he took a male, which may be tentatively regarded as belonging to this species, though differing somewhat considerably in its black head with whole face and mouth, outer orbits and entire scape stramineous; flagellum, stigma, and posterior tarsi black; shagreened postpetiole and apically obsolete areolet.

Gen. LISTROGNATHUS, Tisch.

Verh. z.-b. Ges. Wien, 1870, p. 153.

Listrognathus bifrontalis, sp. nov.

♂. A strongly elongate and very shining black species, with the metathorax dull and white-pilose; mesonotum, propleurae above, radicular region, scutellum and postscutellum, clear orange; labrum, front tibiae and their femora internally, a dot at ocellar orbits, central flagellar and hind tarsal bands broadly, metathoracic apex obliquely on either side, venter, valvulae and apices of all the segments narrowly, pure white. Frons impunctate and laterally elevated, with acute didymate spines above scrobes; scutellum strongly convex, subimpunctate and only basally margined on either side; metathorax punctate-reticulate, discally transstriate beyond the single weak basal carina, with no apophyses and small, elongate spiracles; basal segment glabrous and linear. Wings hyaline and somewhat narrow; areolet transverse and very narrow, double as broad as high, emitting the straight recurrent nervure near its apex; radius sinuate, discoidal nearly straight with no nervelet. Length, 12 mm. ♂ only.

M'fongosi in Zululand during May 1917 (W. E. Jones).

Subtribe CRYPTINI.

Gen. ETHA, Cam.

Mem. Manch. Phil. Soc., xlvii, 1903, p. 17.

Etha castanea, Morl.

Ann. S. Afr. Mus., xv, 1916, p. 381, ♀.

♂. This differs only sexually from the female, in having the abdomen nearly cylindrical, the face centrally immaculate but laterally narrowly white, as also is the frons; large white marks at the external orbits, with second to fourth hind tarsal joints and both extremities of the first concolorous; antennae slender and apically attenuate with apices of all the joints internally setigerous, the setae of the central band white. Length, 15 mm. Captured during October 1916 at Knysna in Cape Colony by Dr. L. Péringuey.

Gen. STICTOCRYPTUS, Cam.

Zeit. Hym., vii, 1907, p. 462.

Stictocryptus petiolaris, Morl.

Loc. cit., p. 380, ♀.

♂. A clear testaceous insect with the head above scape except outer and frontal orbits, the antennae, sternum, valvulae, and 5–7 segments, hind tarsi and apices of their tibiae, black; face, mouth except both extremities of mandibles, outer and frontal orbits, alone stramineous. Length, 13, with antennae, 9 mm. As ♀ in other points.

Taken on 2nd January 1917, at Willowvale, Cape Province; and at Salisbury, Rhodesia, by R. W. Tucker, May 1917.

Stictocryptus testaceus, Cam.

Zeits. Hym.-Dip., vii, 1907, p. 462.

Phaedraspis rufobalteata, Cam., Entom., xxxix, 1906, p. 197, ♀.

♂. A rufescent-testaceous insect, with black and flavous markings. Head black, with clypeus, mandibles except their apices, palpi and the facial, frontal and external orbits broadly flavidous-white; face and clypeus densely white-pubescent, closely and strongly punctate, with apex of latter fulvous and depressed; frons and vertex closely and not very strongly punctate. Antennae attenuate and very shortly pubescent, becoming sub-piceous apically beneath, with the third joint slightly longer than the fourth. Thorax strongly and closely punctate; all the pleurae black; metanotum more closely and equally strongly, though more rugosely, punctate; apophyses wanting. Scutellum sometimes apically flavidous. Abdomen centrally finely punctate; the fourth to base of seventh segments black, anus white and petiole basally flavidous; postpetiole strongly and closely punctate. Legs rufescent with the anterior internally paler; posterior coxae beneath, apical half of hind tibiae, apices or whole of hind tarsal joints and their metatarsal base narrowly, black; remainder of hind metatarsi, and the calcaria, white. Wings somewhat short, hyaline and apically sub-infumate, with stigma and nervures black. ♀. The different coloration of the female lends it a very distinct appearance, though the structure excepting that of the metanotum is analogous. Head black with only the labrum, palpi, and centre of mandibles rufescent; antennae filiform and centrally white above; thorax black with only mesonotum, scutellum, and frenum testaceous-red; metathorax rugosely punctate with apophyses small but distinct, and petiolar area consequently defined; abdomen black with anus white, and whole of second segment with apex of the first red; terebra black and fully half length of abdomen; all the coxae, except extreme apices of posterior, black. Length, ♂♀, 11–12 mm. Both sexes vary considerably in their thoracic coloration, and the ♂ occasionally has nothing but the antennae and sub-apical segments black. I have seen a ♂ with the hind coxae immaculate testaceous, and metapleurae broadly black; in another all the coxae are entirely black with metanotum concolorous, and both its petiolar area and base of abdominal petiole flavous.

I have examined the types of both sexes of this common Indian species, which I have seen from Kashmir, Deesa, Abu, Madras, Poona, Bombay, Bengal, Assam, and as far south as Sumatra. But it is entirely new to Africa, where H. K. Munro captured a normal female at Silverton, near Pretoria, on 9th December 1915.

Gen. CRYPTUS, Fab.

Syst. Piez., 1804, p. 70.

Cryptus perturbator, Schulz.

Schulz. Spolia Hym., 1906, p. 124, ♀.

Cryptus tuberculatus, Cam., Records Albany Mus., i, 1905, p. 308, ♀ (*nec* Grav. 1829).

♂♀. A dull, dark ferrugineous species with palpi, mandibular apices, prosternum, basal sulcus, and often apex of metathorax, terebra, antennae except their white ♀ band, and hind tarsi except their white ♂ band, indefinitely black ; ♀ with whole abdomen, except the membranous-white anus, and the hind legs, sometimes nigrescent ; ♂ with the narrowly exserted labrum, the centre of mandibles, and the facial orbits very narrowly stramineous. A typical member of this genus and the only red one yet known ; frons transaciculate. Length, ♂♀, 9–12 mm.

Pietersburg on 9th September 1915 (H. K. Munro) ; Dunbrody on 11th March 1912 ; and Salisbury on 14th October 1913 ; Cape Town in 1913 (Dr. L. Péringuey).

Cryptus rufoplagiatus, Cam.

Ann. S. Afr. Mus., v, 1906, p. 139, ♂.

A large ♂ homotype of 17 mm. was captured at French Hoek in Cape Province during December 1916, by K. H. Barnard.

Subfamily **Pimplinae.**

TRIBE PIMPLIDES.

Subtribe PIMPLINI.

Gen. HEMIPIMPLA, Sauss.

Grand. Hist. Madag., 1892, p. xiii ; *Cosmiopimpla*, Cam., Trans. S. Afr. Phil. Soc., xv, 1905, p. 198.

Hemipimpla bifasciata, Morl.

Revis. Ichn., iii, 1914, p. 106, ♂♀.

A small female, labelled O'kiep, Warden, 1886, differs from the typical form only in having a length of 12½ mm. to the terebra instead of 10 mm., in its black frons, vertex, occiput, and temples, and in not having the hind legs at all black ; the shape, sculpture, and neuration are identical.

Hemipimpla superba, Szepl.

Kil.-Meru Exped., viii, 3, 1910, p. 79, ♀.

One female, agreeing well with the original description excepting in its darker rufescent abdomen, was captured during December 1916 at Eshowe in Zululand, by H. W. Bell-Marley.

Hemipimpla calliptera, Sauss.

Found at Oudenbosch, Caledon Division, at 1500 feet during January 1919, by K. H. Barnard.

Gen. PIMPLA, Fab.

Syst. Piez., 1804, p. 112.

Pimpla spiloaspis, Cam.

Records Albany Mus., i, 1904, p. 146 ; *P. brunneiventris*, Cam., *lib. cit.*, i, 1905, p. 238.

A pair was captured at M'fongosi in Zululand during May 1917, by W. E. Jones. I owe the synonymy of *P. brunneiventris* with the present species to Dr. L. Péringuey, who examined a ♂ from Salisbury, Southern Rhodesia (May 1917, R. W. Tucker).

Pimpla crocaia, Tosq.

Mem. Soc. Ent. Belg., v, 1896, p. 310.

A small male was found by Dr. L. Péringuey during October 1916 at Knysna in Cape Province. It is now known from Abyssinia, Uganda, Transvaal, Natal, Zululand, and the Cape.

Pimpla melanospila, Cam.

A female bred at Kabete, in British East Africa, during November 1917.

Gen. THERONIA, Holmgr.

Theronia melanocera, Holmgr.

Both sexes of this species have at last been bred, probably from the Noctuid moth *Plusia orichalcea* (a Palaearctic species, occurring in England), at Kabete, on 15th July 1918.

Subtribe GLYPTINI.

Gen. SJOSTEDTIELLA, Szepl.

Kil.-Meru Exped., ii, 1910, p. 786.

Sjostedtiella vittinotum, sp. nov.

♀. A shining black species with profuse flavous markings, the abdomen clear red and wings hyaline. Head strongly transverse, glabrous and very sparsely punctate, with face, cheeks, clypeus, mandibles, except apices and all the orbits broadly, flavous; frons centrally impressed and subcarinate but not cornute; face elevated longitudinally in centre, and hardly discreted from the subconvex and nearly circular clypeus; basal clypeal foveae nigrescent; palpi infuscate, with two basal joints of maxillary fulvous. Antennae slender, filiform—immaculate and shorter than body. Thorax cylindrical, deeply and evenly punctate, with prothorax nearly entirely, two discally coalescent mesonotal vittae, two subcircular mesopleural marks and another at metapleural base, and fully apical half of metathorax except laterally, flavous; metanotum punctate to apex with no areae nor basal transcarina, its apical transcarina weak; spiracles minute, circular, and prominent. Scutellum elongate, convex, punctate, and, like postscutellum and basal carinae and frenal margins, entirely flavous. Abdomen bright red with the anus but slightly infuscate, somewhat closely punctate with short white pubescence; basal segment distinctly a little longer than broad at its glabrous apex and discally impressed; two following deeply impressed *en chevron*; fourth basally bituberculate and remainder nitidulous; terebra slender, black and hardly length of abdomen. Legs slender and flavous; hind ones with femora, tarsi except metatarsal base, tibiae, apices underside of coxae black, their tibiae, calcaria, and metatarsal base rufescent; tarsal claws shortly pectinate. Wings hyaline, with tegulae, stigmal base, and costa in both wings except internally, flavous; nervures and stigma nigrescent; areolet irregularly triangular, externally rounded and pellucid below, emitting recurrent from near centre. Length, 10 mm. ♀ only.

R. M. Lightfoot captured a couple of females at 3500 feet on Matroosberg, Ceres Division, Cape Province.

Sjostedtiella erythrostoma, sp. nov.

♀. A shining black species with some flavous markings, the abdomen clear red and wings hyaline. Very like the last species, but smaller and narrower, with only the clypeus, cheeks, mouth, vertical orbits, propleurae broadly above, scutellum discally, postscutellum, trochanters and anterior coxae, flavous; legs fulvous with hind femora and coxae black; metathorax with no transcarinae; stigmal base and coxa not pale; recurrent nervure emitted from apical fourth of areolet. Length, 7 mm. ♀ only.

The type occurred to R. M. Lightfoot during November 1916 at 4500 feet on Gt. Winterhoek, Tulbagh, in Cape Province.

Sjostedtiella nigritornata, Cam.

Glypta nigritornata, Cam., Ann. S. Afr. Mus., v, 1906, p. 117, ♂.

♂♀. The type of this species, which I have examined, has distinct alar areolet, the nervellus intercepted as in *Sjostedtiella* and all other features of this genus. It is at once known from the above species by its red and very sparsely punctate, shining mesonotum, with deeply impressed notauli. The hitherto unknown female was captured in S.W. Africa (Mandated Territory) during 1916 by Dr. Knobel, and differs from the male in nothing but its flavous head below antennae, frontal orbits, propleurae above, scutellum and front coxae; the terebra is slender, black, and somewhat longer than the abdomen.

Sjostedtiella unirufa, sp. nov.

♂. A somewhat dull and totally red species, with only the antennae and hind legs, from immediately beyond their tibial base, black; the wings are infumate but not nigrescent, with nervures black and tegulae red and extreme base of stigma flavidous. In sculpture it agrees *ut ovum ovo* with *S. nigritornata*, from which the dark wings, with distinctly postfurcal lower basal nervure, will distinguish it. Length, 10 mm. ♂ only.

The type occurred to Bell-Marley at Eshowe in Zululand during December 1916.

TRIBE LISSONOTIDES.

Gen. SYZEUCTUS, Forst.

Synop. Vert. Ver. Rheinl., xxv, 1868, p. 167.

Syzeuctus annulatus, Brulle.

Lissonota annulata, Brulle, Hist. Nat. Ins. Hym., iv, 1846, p. 109, ♂♀.

At least the ♂ of this species is a true *Syzeuctus*, with elongate-oval metathoracic spiracles. It was taken at Grahamstown by Mr. H. Baines during February 1911.

Syzeuctus spilostoma, Cam.

Lissonota spilostoma, Cam., Records Albany Mus., i, 1905, p. 239, ♀.

Dr. L. Péringuey has been so good as to send me a homotype of this female, taken at Grahamstown during May 1916. This has the metathoracic spiracles elongate-ovate.

Syzeuctus bisannulatus, sp. nov.

♀. A shining black species with dull red thorax, instantly known by the pure white-banded abdomen, antennae and hind tibiae. Head shining and vertically narrow with prominent eyes; the apically rounded clypeus and the centre of face convex and hardly discreted, latter sparsely punctate and laterally pale flavous, mouth and apical half of clypeus concolorous. Antennae filiform and slender, with basal joints elongate and five at their apical two-thirds pure white. Thorax confluently punctate and dull, crimson-red with only sternum infuscate; notauli and all metathoracic carinae wanting; spiracles small and linear. Scutellum shining, sparsely punctate, concolorous with thorax and not margined. Abdomen deep black and strongly nitidulous, with sparse white pubescence and the basal half of third segment pure white; first segment quite smooth, second obsoletely alutaceous; terebra stout, black, rather longer than half abdomen and apically acute. Legs slender, elongate and black; anterior coxae flavous beneath; anterior tibiae and, except basally, front femora testaceous; a third of hind tibiae immediately beyond their base, and basal two-thirds of third hind tarsal joint, pure white. Wings narrow with tegulae red, stigma and nervures black, and extreme apices sub-infumate; basal nervure nearly continuous; areolet triangular, petiolate and not broad, emitting straight recurrent nervure slightly beyond its centre; nervellus centrally intercepted, its spurious nervure apically arcuate. Length, 9½ mm.; terebra, 3 mm. ♀ only.

Captured at Durban during February 1913, by W. Haygarth.

Syzeuctus fulvipalpis, Cam.

Lissonota fulvipalpis, Cam., Ann. S. Afr. Mus., v, 1906, p. 122.

Male. A dull and very strongly punctate black insect, with hyaline wings, stumpy thorax, and profuse red markings. Head almost broader than thorax, and hardly constricted behind the internally parallel eyes; occiput nitidulous; frons centrally impressed and laterally transstriate, with its sides, all the orbits and head below the scape red; face centrally subbuccate. Antennae red, with scape and two or three basal flagellar joints nigrescent above; its apex strongly compressed. Thorax very short and high, with metathorax shorter than high; prosternum and pleurae, hamate marks at radius coalescent with an apically truncate mark on mesonotal disc, centre of mesopleurae broadly, frenum below radices, apex of metathorax broadly and a lateral spot, red; metathorax with no carinae. Scutellum and postscutellum red. Abdomen linear, basally nitidulous and apically subpilose ; base and apex of the four first segments, and apex of remainder obscurely red. Legs slender and red with hind femora except apically, and base of both trochanters and coxae, black. Wings hyaline with no apical cloud ; tegulae red, nervures and stigma castaneous ; areolet elongately petiolate, emitting the concave recurrent nervure from its apical third. Length, 10 mm.

Taken at the junction of the Crocodile and Marico Rivers in the Transvaal during February 1918, by R. W. Tucker. I have seen the female type of this species, which is referable to *Syzeuctus*, in the South African Museum.

Gen. ASPHRAGIS, Forst.

Synop. Vert. Ver. Rheinl., xxv, 1868, p. 166.

Asphragis flavidorbitalis, Cam.

Asphragis ? flavidorbitalis, Cam., Entomologist, xxxix, 1906, p. 18, ♀.
Philotymma ? flaviceps, Cam., Ann. S. Afr. Mus., v, 1906, p. 131, ♂.
Asphragis flavidorbitalis, Morl., *loc. cit.*, xvii, 1917, p. 217, ♂♀.

I find my ♂ of this species, described at the last reference, was not new ; for it had already been brought forward as a *Tryphonid* (!) by Cameron under the genus *Philotymma*. This ♂ type, which I have examined, differs from my specimen only in the lack of black upon the second segment and its greater restriction upon the vertex. The metathoracic spiracles are small and circular.

Asphragis rufipes, Cam.

Trans. S. Afr. Phil. Soc., xv, 1905, p. 201.

Another male of this Cape species, taken at Salisbury in South Rhodesia during May 1917 by R. W. Tucker, differs from the original description slightly in coloration. The metanotum is nigrescent only around the spiracles ; the incisures only of the four basal segments are stramineous-white, and not " for the greater part dull rufous " ; and the legs, " coloured like the thorax," are testaceous with the tarsi no darker, the anterior and apices of hind coxae white, and the remainder of hind coxae with their femora nigrescent. The species is correctly ascribed to the present genus.

Asphragis straminea, sp. nov.

♂. A small, pale flavous insect with luteous stigma and profuse black markings thus : mandibular apices ; ocellar region, emitting a central occipital line to basal capital margin ; lateral mesonotal lines, and apex of central lobe ; frenum ; metanotal disc, more narrowly towards apex; abdominal disc, except base and apex of all the segments; onychii. The coloration is not dissimilar to that of *Syzeuctus maculatorius*, Fab.; the sculpture is as in *A. flavidorbitalis*, though slightly more superficial. Metathoracic spiracles small and circular. Hind tarsi, antennae and alar nervures infuscate. Length, 5 mm. ♂ only.

"Parasite of Codlin Moth," South Africa.

Gen. Lissonota, Grav.

Lissonota deversor, Grav.

Ichn. Europ., iii, 1829, p. 591; Morley, Ichn. Brit., iii, 1908, p. 217.

A rather pale, but otherwise perfectly typical female of this palaearctic species was caught on Table Mountain, Cape Town, during February 1919, by R. W. Tucker. The last specimen I saw flew in to artificial light at Monks Soham House, Suffolk!

Tribe ACAENITIDES.

Gen. Acronus, Tosq.

Mem. Soc. Entom. Belg., v, 1896, p. 269.

Acronus enderleini, Schulz.

Spolia Hym., 1906, p. 117, ♀.

The ♂ of this very large species was captured by Dr. G. Arnold on 4th December 1911 in the Matoppo Hills of Southern Rhodesia. It differs only sexually from the ♀; its only coloration is the testaceous flagellar tip; the length is 30 mm., with an expanse of its beautifully iridescent-blue wings of no less than 55 mm.

Acronus saliiformis, Enderl.

Zoolog. Anzeiger, xxviii, 1904, p. 67.

Originally described from Usambara. H. W. Bell-Marley took a female at Durban, November 1915; Miss Edwards another female at Barberton, Transvaal.

Gen. Ctenotoma, Cam.

Ann. S. Afr. Mus., v, 1906, p. 127, and v, 1907, p. 224.

Ctenotoma ruficeps, Cam.

Ann. S. Afr. Mus., v, 1906, p. 129, ♀.

A pale form of the ♀ was bred from the moth *Gonometra maputana* at Salisbury in Southern Rhodesia during 1908. The ♂ is still unknown.

Gen. PARACOLLYRIA, Cam.

Ann. S. Afr. Mus., v, 1906, p. 106.

Paracollyria flavipennis, Cam.

Loc. cit., p. 107, ♂.

W. E. Jones took another male at M'fongosi in Zululand during February 1917. This differs from the type, which I have seen, in having the front legs almost entirely black and the apices of both wings broadly black, which nigrescence is reflexed above the anal nervure and occupies the apical three-fourths of the discoidal cell, ending in a streak within the areolar nervure.

Paracollyria ruficollis, Cam.

Loc. cit., p. 107, ♀.

The hitherto unknown ♂ was captured at Bulawayo in Southern Rhodesia on 3rd August 1913. It differs from the ♀ description in having the whole pro- and meso-thorax, scutellum, postscutellum, and frenum, with whole anterior legs entirely pale red; the alar " clear hyaline cloud " is wanting; the wings are uniformly nigrescent, with the stigmal base alone conspicuously albescent. The ♂ segments two to four are longer than those of the ♀; its antennae are exactly as long as the body, 15 mm., filiform and apically subtruncate.

Gen. PHAENOLOBUS, Forst.

Verh. pr. Rheinl., xxv, 1868, p. 168.

This is an extremely puzzling genus of unstable coloration, whereof a good many species occur in Africa, though only four have hitherto been recorded. I have before me single examples of three others: (*a*) is from Zululand in January 1917, and differs from the Palaearctic (and British) *P. atrator*, Rossi, in nothing but colour; the head below the antennae is piceous with mouth and orbits testaceous, all the legs with the exception of the front and hind coxae and the onychii are red, and the wings infumate with violaceous iridescence and the apical margin darker; (*b*) from the same locality in February, differs from (*a*) solely in having the head and mesonotum brick-red and the legs, except anterior femora and tibiae with front tarsi, black; (*c*) was captured at Eshowe in Zululand during December 1916, and has the notauli somewhat less deeply impressed with the black metathorax striate; all the remainder of thorax, the head, whole legs and two basal segments, are brick-red ; I do not think it can be *P. luteus*, Szepl., Kil.-Meru Exped., viii, 3, 1910, p. 87 (*nec* Holmgr.) =*P. flavus*, Roman, Entom. Tidskr., xxxi, 1910, p. 184. My material is insufficient to determine the specific value of these small distinctions.

Africa is certainly the home of the *Acaenitides*, and their number is so rapidly swelling that a table of the genera already known to occur is not without its value :

(4) 1. Alar areolet present and entire.
(3) 2. Hypopygium not reaching abdominal apex . *Phaestacaenitus*, Burgst.
(2) 3. Hypopygium extending to abdominal apex . . *Coleocentrus*, Grav.
(1) 4. Alar areolet utterly wanting.
(6) 5. First tarsal joint longer than rest together . . *Encardia*, Tosq.
(5) 6. First tarsal joint not longer than remainder.
(8) 7. Second recurrent emitted before areolar nervure . . *Arotes*, Grav.
(7) 8. Second recurrent emitted beyond areolar nervure.
(18) 9. Notauli deeply impressed.
(13) 10. Cubital nervelet utterly wanting.
(12) 11. Legs very long ; wings fasciated . . . . *Ctenotoma*, Cam.
(11) 12. Legs short and stout ; wings simple . . . *Phaenolobus*, Forst.
(10) 13. Cubital nervelet present though often short.
(15) 14. Second segment longer than apically broad . . . *Collyria*, Schiöd.
(14) 15. Second segment not longer than apically broad.
(17) 16. Legs short and stout ; antennae shorter than body *Chorischizus*, Forst.
(16) 17. Legs elongate, antennae nearly as long as whole body *Paracollyria*, Cam.
(9) 18. Notauli not deeply impressed, usually indicated.
(20) 19. Metathorax long and rugose ; head longer than broad *Hieroceryx*, Tosq.
(19) 20. Metathorax and head not longer than broad.
(22) 21. Femora not compressed; front claws sub-apically dentate *Acaenitus*, Latr.
(21) 22. Femora compressed ; tarsal claws not dentate . . *Acronus*, Tosq.

TRIBE BANCHIDES.

Gen. TEGONA, Morl.

Faun. Ind. Ichn., i, 1913, p. 251.

Tegona discreta, Morl.

Ann. S. Afr. Mus., xvii, 1917, p. 213, ♀.

♂♀. I have now received from the same locality as the type in Zululand both sexes of this clear testaceous species. The ♂ was captured in February 1917 and differs in having the head and thorax immaculate, with the ocellar region alone narrowly nigrescent ; the anal valvulae are large.

Subfamily **Tryphoninae.**

TRIBE METOPIIDES.

Gen. METOPIUS, Panz.

Krit. Revis., ii, 1806, p. 78.

Metopius discolor, Tosq.

Mem. Soc. Entom. Belg., v, 1896, p. 361; *M. erythropus*, Cam., Records Albany Mus., i, 1904, p. 148; *M. recedens*, Schulz., Spolia Hym., 1906, p. 98.

No label.

TRIBE TRYPHONIDES.

Gen. PERILISSUS, Holmgr.

Sv. Ak. Handl., 1854, p. 61; 1855, p. 121.

Essential Characters.—Head discally broad and subquadrate; face centrally neither concave nor protuberant; mandibles simple, the teeth of unequal length and the upper not apically bifid; frons not concave. Scutellum simple and not quadrate. Abdomen deplanate and not tuberculate, basally subpetiolate; spiracles of basal segment not beyond its centre; terebra not extending beyond anus. Legs with hind calcaria entire; tarsal claws not pectinate. Alar areolet entire and not pentagonal.

Perilissus semifulvator, sp. nov.

A small and somewhat stout black species, closely punctulate and a little shining, with no flavous markings and the abdomen alone totally fulvous. Head almost broader than thorax, subcubical, tumidous behind the eyes; immaculate. Antennae slender, filiform and longer than body; immaculate. Thorax closely punctulate, with apical notauli; mesopleurae very finely punctate; metathorax dull with areola elongate and subparallel-sided, costulae very strong, and petiolar area basally distinct. Scutellum black and subconvex. Abdomen pale red throughout; basal segment not dull, alutaceous and very finely punctate, hardly sulcate above the central and subprominent spiracles; second transverse; terebra hardly darker and extending beyond anus. Legs slender and totally black; tarsal claws not pectinate. Wings with radix and tegulae stramineous, stigma piceous and slightly paler basally; areolet large, irregularly orbiculate and distinctly a little petiolate; nervellus antefurcal and intercepted at its centre. Length, 6½ mm. Female only.

The structure and size of this species are extremely similar to those of *P. orbitalis*, Grav.; and both belong to the division known as *Ecclinops*, which is characterised by having the clypeus finely punctate, nervellus not intercepted above its centre, discoidal cell apically subrectangular, head hardly broader than thorax, posteriorly subparallel-sided, and the abdomen broadly red. Structurally these two species differ in little more than the strong metanotal costulae, evenly punctate mesopleurae and central interception of the nervellus of the new kind. Seven species of *Mesoleptini* have been recorded from the extreme north of Africa; it is interesting to find that they extend further south. This was found at Kabete, British East Africa, on 27th April 1918.

Subtribe CTENOPELMINI.

Gen. ERROMENUS, Holmgr.

Sv. Ak. Handl., 1855, p. 221.

Erromenus fumipennis, sp. nov.

♂. Pale testaceous and dull, with the head, thorax, and coxae somewhat shining; antennae, eyes, ocelli, mandibular apices, onychii, and all the nervures of the evenly infumate wings, alone black. Head short and vertically narrow, not as broad as thorax; frons deplanate, with scrobes extending to apical ocellus and centrally cornute; face and clypeus subconvex and discreted, with basal foveae of latter infuscate and its apex margined; mandibles small and stout, apically bidentate and basally setulose; ? palpi obsolete. Antennae black, setaceous, pilose, and but little longer than half body, with scape cylindrical and apically truncate. Thorax stout and short, with neither notauli nor sternauli; propleurae forming a lateral margin to mesonotum broader than tegulae; metathorax short and subvertical, with strong and semi-circular basal area from the apex whereof a carina extends to small apophyses on either side; pleural carinae strong; spiracles small and oblong. Scutellum small, deplanate and not margined, with its disc centrally impressed and basal sulcus multicarinate; postscutellum obsolete, laterally determinately carinate. Abdomen short, stout, sessile, and apically deflexed upon the venter ; first segment finely bicarinate nearly to apex ; two next strongly transverse and discally uneven ; fourth and fifth thrice as broad as long, strongly convex, and laterally sub-infuscate. Legs short and stout ; front tibiae unicalcarate ; tarsi cylindrical and short, with claws mutic and only apically curved. Wings very broad, with tegulae testaceous, nervures and stigma black ; costa conspicuously black ; basal nervure strongly curved above, continuous through median ; inner cubital but little curved ; apical abscissa of radius double length of basal ; areolet strong, oblique-rectangular and half as long again as broad, petiolate, and emitting the curved and bifenestrate recurrent nervure from near its apex ; nervellus intercepted far below centre. Length, 10 mm. ♂ only.

This species is at most but an aberrant member of *Erromenus* ; but the erection of a distinct genus would be premature in the absence of the female.

The type was captured during January 1917 at M'fongosi, in Zululand, by W. E. Jones.

PRIONOPODA, Holmgr.

Sv. Ak. Handl., 1855, p. 120.

Prionopoda testaceoides, sp. nov.

? *Prionopoda testacea*, Szep., Kil.-Meru Exped., viii, 3, 1910, p. 91.

♂♀. A slender and totally testaceous species, strongly resembling the genus *Paniscus*, but with buccate temples, petiolate areolet and rectangular cubital nervure. Head glabrous and basally as broad as the eyes, with temples, seen from above, as long as the eyes ; face and clypeus deplanate and discreted ; mandibular apices, eyes, ocelli and their region, alone black. Antennae very slender, infuscate-testaceous and longer than the body. Thorax glabrous and nitidulous with obsolete notauli and sternauli, metathorax impunctate with complete areae, areola hexagonal and emitting costulae parallel with its apical transcarina, which extends to lateral carinae ; petiolar area entire and concave, spiracles ovate and not small. Scutellum convex, shining, apically subcompressed, and laterally carinate only at extreme base. Abdomen shining with short fulvous pubescence, subcompressed or in ♀ compressed ; first segment smooth, strongly elongate and discally nearly straight, with distinct spiracles slightly before centre ; valvulae exserted, terebra shorter than basal segment and fulvous, with sheaths apically truncate. Legs slender and not very long ; claws pectinate. Wings hyaline with tegulae and stigma pale testaceous, nervures infuscate ; lower basal nervure postfurcal and reflexed ; inner cubital rectangular below base of stigma, and thence emitting a strong and short nervelet ; areolet oblique, nodose-petiolate, internally rectangular and apically subacute ; radial nervure apically sinuate ; nervellus intercepted distinctly above centre. Length, 11–13 mm.

I have described this species from a pair captured at Salisbury in Southern Rhodesia by D. Dodds, and at Willowvale, Cape Province, on 2nd January 1917. I am sorry to be unable to compare it with the late Dr. Szepligeti's Kilimanjaro species.

Gen. CTENOPELMA, Holmgr.

Sv. Ak. Handl., 1885, p. 117.

Ctenopelma ligulata, sp. nov.

♀. A large and ochraceous female with the eyes, ocellar region to occiput, antennae except underside of scape, three mesonotal vittae, base of third segment triangularly and disc of the following ones, stigma and nervures, lateral margin of third to fifth segments and apices of tarsi indefinitely, black. Head transverse and closely coriaceous, with vertex narrow and temples as broad as eyes, frons concave ; face deplanate and not discreted from the liguliform clypeus, which is laterally sulcate and transcarinate ; mandibles stout, triangular, prominent, apically obtuse and unidentate. Antennae setaceous and nearly as long as body, with scape nigrescent-ferrugineous beneath. Thorax stout and closely punctate, with strong notauli and weak sternauli ; apex of pronotum elevated and truncate ; metathorax short and obliquely declived, shining with the petiolar area transstriate ; areae wanting ; basal transcarina laterally strong and sinuate, centre of apical obsolete ; apophyses wanting, spiracles large and linear. Scutellum convex and prominent, finely transaciculate throughout and apically obtuse. Abdomen shining, very finely punctate, deep, and apically compressed ; basal segment apically convex, with spiracles obsolete ; ventral plica strong ; spicula acute and slightly exserted. Legs neither stout nor elongate ; claws pectinate ; all the onychii, and anterior fourth tarsi joint, black, hind coxae nitidulous. Wings ample and hardly flavescent; upper basal nervure straight, the lower sub-antefurcal; areolet narrow, petiolate, emitting the straight recurrent nervure from its extreme apex; nervellus intercepted at its centre. Length, 19 mm. ♀ only.

The type was bred from the moth *Trabala* sp., on 23rd December 1906, by G. F. Leigh at Durban, Natal.

The only species of this genus previously known from Africa was described by Dr. Szepligeti in 1910 from Kilimanjaro.

Subfamily **Ophioninae.**

TRIBE CREMASTIDES.

Gen. CREMASTUS, Grav.

Ichn. Europ., iii, 1829, p. 730.

Cremastus geminus, Grav.

Loc. cit., p. 744, ♀; Thomson, Opusc. Entom., xiv, p. 1454; Morley, Ichn. Brit., v, 1914, p. 56, ♂♀.

Two typical ♂♂ "parasite of a trap-door caterpillar (*Hepialidae*)" have been bred during June 1917, at Alicedale, in the Cape Province, by F. Cruden. This is an addition to the African fauna; in Europe it preys exclusively upon *Psychid* moths.

Cremastus testaceus, Szepl.

Kil.-Meru Exped., viii, 3, 1910, p. 50.

Originally described from Usambara. W. E. Jones found a ♀ at M'fongosi in Zululand during January 1917.

Cremastus noxiosus, Morl.

Faun. Ind. Hym. Ichn., i, 1913, p. 501, ♂♀.

Recorded from Africa by me in these Annals (xvii, 1917, p. 225). I have recently seen a pair captured on 25th October 1911 by C. J. Swierstra at Fountain Grove in the Pretoria district of the Transvaal.

Cremastus annulicornis, Tosq.

Mem. Soc. Ent. Belg., v, 1896, p. 416.

Females were found in May 1917 at Salisbury in Rhodesia, and Komati Poort in East Transvaal in November 1918, by R. W. Tucker. Previously known only Delagoa Bay and Zululand.

Gen. PIMPLOMORPHA, Cam.

Ann. S. Afr. Mus., v, 1906, p. 95; *Androna,* Cam., Ann. Mus. Transvaal, 1911, 185.

Pimplomorpha trilineata, Cam.

Loc. cit., ante; Morley, Ann. Mag. Nat. Hist., xvi, 1915, p. 339.

Another female was found by R. W. Tucker, during February 1918, at the junction of the Crocodile and Marico Rivers in the Transvaal.

TRIBE CAMPOPLEGIDES.

CAMPOPLEX, Grav.

Ichn. Europ., iii, 1829, p. 453.

Campoplex erythrospilus, Cam.

Ann. S. Afr. Mus., v, 1906, p. 94, ♀.

The red basal segment and red-marked thorax are distinctive; its author omits mention of the terebra, which is stout, black, and hardly extending beyond abdominal apex. R. M. Lightfoot took another ♀ during November 1916, at Gt. Winterhoek, Tulbagh, Cape Province, at 4500 feet.

Campoplex crassicaput, sp. nov.

A black species with the legs and anus red; head strongly buccate. Mandibles except apically, palpi, underside of scape and apices of the black coxae pale. Head discally subquadrate, as in the genus Olesicampa; frons not impressed. Antennae stout, attenuate and but little longer than half body with simple scrobes. Thorax immaculate with propleurae not striate, the metanotal impression somewhat deep and spiracles sub-elongate. Abdomen black, with the fourth and following segments abruptly red, sometimes with their apices infuscate above; valvulae red, ventral plica stramineous. Legs slender and not elongate, fulvous; hind femora and calcaria entirely red, their tibiae and tarsi nigrescent with the former, except basally, tinged with red. Wings somewhat small; radix and tegulae stramineous; recurrent nervure emitted beyond centre of the petiolate and somewhat small areolet; hindwings with basal radial abscissa very slightly longer than recurrent nervure; nervellus subgeniculate distinctly below centre. Length, 9–10 mm. Male only.

At once known by the subquadrate vertex. Much more like an Olesicampa than a Campoplex in its capital structure and abdominal coloration; but the antennae are short and stout, and the metathoracic spiracles elongate.

Two males were captured at Salisbury in Southern Rhodesia during May 1917, by R. W. E. Tucker.

Gen. NEPIERA, Forst.

Verh. Ver. Rheinl., xxv, 1868, p. 156.

Nepiera concinna, Holmgr.

A couple of females, taken by L. Péringuey in October 1916, at Knysna, in Cape Colony; and by R. W. E. Tucker, in February 1918, at the junction of the Crocodile and Marico Rivers in the Transvaal.

Gen. ANGITIA, Holmgr.

Holmgren, Sv. Ak. Handl., 1858, No. 8, p. 106; Thomson, Opusc. Entom., xi, 1887, p. 1153.

Essential Characters.—Body slender. Head distinctly transverse and not vertically quadrate; face not pale-marked; mandibular teeth of equal length; eyes glabrous and internally subparallel, not or hardly emarginate next scrobes; clypeus with no central apical tooth. Thorax black throughout; petiolar area not excavate; metathoracic spiracles circular. Abdomen black, rarely more or less red, not apically explanate; terebra usually elongate. Legs slender; tarsal onychii normal and onyches not or but finely pectinate. Wings hyaline; areolet either entire or wanting; nervellus vertical and strongly postfurcal, never geniculate, but usually pellucid.

Table of the African Species of the Genus Angitia.

(6) 1. Head vertically broad; flagellum filiform and slender; scape usually black.
(3) 2. Alar areolet wanting and stigma narrow . . 1. *apostata*, Grav.
(2) 3. Alar areolet entire and stigma normal.
(5) 4. Metathorax apically rugose; mesopleurae nitidulous . 2. *rufipes*, Grav.
(4) 5. Metathorax not apically rugose; pleurae dull . 3. *claripennis*, Thoms.
(1) 6. Head vertically narrow; flagellum stout; scape usually pale beneath.
(10) 7. Areolet regularly triangular, recurrent central; hind tibiae banded.
(9) 8. Mesopleurae evenly punctate; hind tibiae hardly pale 4. *chrysosticta*, Gr.
(8) 9. Mesopleurae coarsely punctate; tibiae basally pale 5. *trochanterata*, Th.
(7) 10. Areolet irregular, recurrent beyond centre; tibiae not banded
6. *cylindrica*, Brisc.

Angitia apostata, Grav.

Morley, Ichn. Brit., v, 1914, p. 187; *Campoplex apostata*, Gr., 1829, p. 510.

I am quite unable to distinguish between a female *Angitia* of the subgenus *Dioctes*, Forst., taken at Steynsburg, in Cape Colony, during April 1914, by R. M. Lightfoot, and the normal European form of *A. apostata*, Gravenhorst, which has not before been noticed anywhere in Africa. It possesses red abdomen and terebral valvulae, coxae, antennae, and tarsi; but this coloration appears to represent nothing but a local form; and in structure the two agree *ad amussim.* It is quite distinct from any of the exotic species described by me in Fauna Indica, 1913, p. 470.

Gen. RHIMPHOCTONA, Forst.

Verh. pr. Rheinl., 1868, p. 153.

Essential Characters.—Head broadly transverse and but little constricted posteriorly; clypeus short, not discreted from face and often centrally dentate apically. Antennae setaceous and fully three-fourths the length of body. Thorax stout, with speculum somewhat dull; metathorax declivous throughout and a little produced apically, with distinct areae; costulae subentire, spiracles not circular. Scutellum neither deplanate nor margined. Abdomen strongly compressed from base of third segment; terebra elongately exserted. Areolet entire and usually petiolate; nervellus geniculate.

Rhimphocotona bolibasalis, sp. nov.

♂♀. A dull and slender black species with red abdomen and legs, distinct silvery pubescence, hyaline wings and elongate terebra. Head closely punctate and dull, transverse but not constricted behind eyes, temples subparallel; frons deplanate and not carinate; face and clypeus not discreted, evenly punctate and dull with apex of latter subtruncate, its centre tuberculiformly produced; cheeks very short, palpi testaceous; mandibles stout, shining, subparallel-sided and, except their equally bidentate apex, flavidous. Antennae apically setaceous; of ♀ but little longer than half body with scape apically ferrugineous beneath, of ♂ three-fourths length of body with scape mainly ferrugineous. Thorax deeper than broad, closely punctate, dull and immaculate, notauli short and not deeply impressed, sternauli strong; metanotum gradually declived from base to the distinct metathoracic production above hind coxae, and not curved; areola shorter than the transstriate and hardly impressed petiolar area, elongate-hexagonal, and nearly twice as long as broad, emitting indistinct costulae from its basal third; lateral carinae strong, spiracles linear. Scutellum and its basal fovea dull, closely punctate; the latter slightly convex. Abdomen slender, claret-red, closely shagreened and dull, with the apical segments and the black basal half of the first one nitidulous; ♂ with anus discally black from apex of fifth segment, ♀ with basal half of second segment, its reflexed epipleurae, and extreme base of the third nigrescent; apical half of basal segment laterally rounded and discally convex; second segment subconstricted near its base; terebra black and fully three-fourths the abdominal length (terebra, 6 mm.; abdomen, 7½ mm.). Legs slender and not elongate, unicolorous claret-red, usually with hind tarsi and in ♀ their tibiae infuscate; ♂ with all coxae except at apex, ♀ with hind coxae sometimes, black; claws not small, basally hardly pectinate. Wings narrow and not elongate, extending to fourth segment; hyaline with tegulae fulvous, radix paler, stigma and nervures nigrescent with former rarely fulvidous; basal nervure continuous; discoidal cell narrow, subparallel-sided and apically acute below; areolet strong, elongately petiolate and triangular with its lower side curved and emitting the straight recurrent nervure hardly beyond its centre; nervellus subgeniculate at its lower third, emitting no spurious nervure. 9–11 mm. ♂♀.

Probably not an uncommon species. H. W. Bell-Marley found the type at Eshowe in Zululand during December 1916; W. E. Jones a female at M'fongosi in Zululand during February 1917; and K. H. Barnard both sexes during 1916 at 4000 feet in the Hottentot Holland Mountains (Caledon side) in the Cape Province.

Tribe ANOMALIDES.

Gen. Trichomma, Wesm.

Bull. Acad. Sc. Berg., xvi, 1849, p. 119.

Trichomma albicoxa, Morl.

Revis. Ichn., ii, 1913, p. 65, ♂♀.

Both sexes of this distinct species have again been captured, by G. Shortridge at St. John's in the Cape Province during 1905, and by Miss Pegler at Kentani, in the Cape Province.

TRIBE OPHIONIDES.

Subtribe NOTOTRACHINI.

Gen. NOTOTRACHYS, Marsh.

Trans. Ent. Soc., 1872, p. 260.

Several species of this tribe have now been described from South and Central Africa, but in so inadequate a manner and so scattered a form that it appears well to give a conspectus of them here. I do not know *Ophionomorpha* (*Ophiomorpha*, sic), Szepl., Genera Ins., xxxiv, 1905, p. 34, with two species from Afric. equat.; *Silavoga*, Cam., Ann. Mus. Transvaal, ii, 1911, p. 190, with one species from Afric. mer.; and *Coiloneura*, Szepl., Kil.-Meru Exped., viii, 3, 1910, p. 47, with a single species from Kilimanjaro. I have seen the types of Cameron's genera *Ophiononeura* (*Ophioneura*, sic), Records Albany Mus., i, 1904, p. 174, and *Erythrophion*, Ann. S. Afr. Mus., v, 1906, p. 87, and I consider neither them nor *Stictophion*, Cam., *loc. cit.*, p. 85, to be distinct from *Nototrachys*, Marsh., whereof the following table comprises the described species, not all of which seem good to me.

African Nototrachys Species.

(8) 1. Cheeks short; basal metanotal areae distinct . . *Ophiononeura*.
(7) 2. Head and thorax mainly black; coxae mainly black.
(4) 3. Coxae not flavous-marked . . . . . . 1. *foliator*, Fab.
(3) 4. Coxae black and flavous.
(6) 5. Face, mesonotal disc and pleurae not flavous . 2. *rufidens*, Cam.
(5) 6. Face, mesonotal disc and pleurae flavous-marked . 3. *bidentatus*, Cam.
(2) 7. Head and thorax mainly red; coxae entirely red
4. *flavomaculatus*, Cam. 1904.
(1) 8. Cheeks distinctly elongate; metanotum basally carinate, but with no areae.
(14) 9. Anterior tibiae inflated and basally constricted; body rufescent
Erythrophion.
(13) 10. Metanotum basally punctate; anterior coxae red.
(12) 11. Stigma red; head and thorax not flavous-marked 5. *ferrugineus*, Cam.
(11) 12. Stigma black; head and thorax flavous-marked . 6. *tisisthenes*, Morl.
(10) 13. Metanotum basally glabrous; anterior coxae flavous 7. *callicrates*, Morl.
(9) 14. Anterior tibiae slender, not constricted; body black . *Stictophion*.
(16) 15. Stigma, legs and base of antennae black . . 8. *nigricans*, Cam.
(15) 16. Stigma testaceous; legs and antennal base red . . 9. *rufipes*, Cam.

I have had to insert the new names, *tisisthenes* and *callicrates*, because with his usual carelessness Cameron happens to have called no less than three species *flavomaculatus*. For the earliest of these, that described by him in the Records Albany Mus., 1904, *flavomaculatus* is retained; for the second, that described in Trans. S. Afr. Phil. Soc., January 1905, I have substituted *tisisthenes*; and for the last, that described in Albany Museum, April 1905, *callicrates* is substituted. It is by no means clear whether their author intended the last two as distinct *inter se*; as his description is considerably involved, I here present it in a straightforward form:

Nototrachys tisisthenes, nom. nov.

Nototrachys flavomaculatus, Cam., Trans. S. Afr. Phil. Soc.,
xv, 1905, p. 199.

Red, with profuse flavous markings and the abdomen discally nigrescent. Head glabrous and nitidulous; face, clypeus, mandibles, palpi and orbits, pale flavous; frons closely transaciculate and centrally carinate. Antennae nigrescent, with scape red. Thorax with the prothorax, two basally dilated mesonotal lines, mesopleurae except centrally above, metapleurae below radices and broadly at apex, and declivity of metathorax, pale flavous; base of propleurae stoutly and obliquely striate; mesonotum strongly and irregularly transstriate, with its apex laterally punctate; mesopleurae punctate-reticulate below, above with basal half longitudinally striate and the apical smooth; metathorax closely and strongly reticulate, basally subglabrous before the basal transcarina, which is centrally emarginate towards scutellum; metapleurae coarsely reticulate. Scutellum and postscutellum pale flavous, the former reticulate. Abdomen with second and following segments discally nigrescent; terebra 3 mm. in length. Legs rufescent, with the anterior tibiae paler; "there is a curved keel in front of the middle coxae and another between it and the posterior." Wings hyaline and short, about half length of body; stigma and nervures black. Length, 10 mm. Female only.

This description was published in January 1905; and in April 1905 appeared another description, with the same type-locality, Dunbrody in Cape Colony.

Nototrachys callicrates, nom. nov.

Nototrachys flavomaculatus, Cam., Records Albany Mus.,
i, 1905, p. 250.

This differs from *N. tisisthenes* above in the following details: Mandibular teeth and propleural apices rufescent; pale mesonotal lines dilated at the apex, instead of at base; base of petiolar area of metathorax bears a flavous line; mesonotum laterally punctate throughout; apex of scutellum bears two short and stout carinae; metanotum sparsely punctate before the basal transcarina; mesopleurae mainly rugose. And abdominal details are added. Postpetiole laterally and apically carinate; apical half of basal segment glabrous, nitidulous and dilated, with some stout apical striae.

These distinctions, though individually slight, prove in the aggregate that *tisisthenes* and *callicrates* were not intended by Cameron to be identical species.

Nototrachys flavomaculatus, Cam.

Ophioneura flavomaculata, Cam., Records Albany Mus., i, 1904,
p. 175.

Two more females were captured by R. W. E. Tucker during May 1917 at Salisbury in South Rhodesia.

Nototrachys nigricans, Cam.

This species (and presumably *N. rufipes*, which I do not know) certainly does differ to an appreciable extent from Marshall's genus in its lack of basal metanotal carinae, in the evenly reticulate frons, whereof the central carina is obsolete, in its very much longer cheeks and ♂ flagellum, which is shorter, less filiform, and basally subattenuate. L. Péringuey took a male during October 1918 at Caledon in Cape Province. No female *Stictophion* is yet known.

Nototrachys nirvana, sp. nov.

♂♀. A dull red species with the orbits and in ♂ head below antennae. pronotum, mesonotal vittae, scutellum, and in ♂ sternum with anterior coxae and most of pleurae, clear flavous; basal scutellar sulcus, ♀ disc of second and third segments and the elongate terebra and ♂ ocellar and metathoracic spiracular regions, black. Length, 10–14 mm. This species differs from the type of *Erythrophion ferrugineus* solely in its glabrous temples and internal orbits, basally carinate metanotum, infuscate costa and stigma, flavidous scutellum and orbits and lateral mesonotal marks. It was captured by W. E. Jones during March 1917 at M'fongosi in Zululand.

Gen. Euryophion, Cam.

Ann. S. Afr. Mus., v, 1906, p. 83.

Essential Characters.—Head posteriorly broader than the eyes; clypeus not apically produced; mandibles vertical; frons basally, sometimes also laterally, carinate; ocelli emitting carinae to orbits; antennae not pale-banded; metathorax not colliformly produced apically; metanotum short; petiole sculptured; intermediate tibiae bicalcarate; hind coxae normal; wings not hyaline, usually violaceous throughout; nervellus strong.

Euryophion nebulifer, sp. nov.

A fulvo-testaceous species with only the mandibular apices, dots behind tegulae, and abdominal apex from centre of third segment indefinitely black. Head finely and coalescently punctate, transverse and declived immediately behind ocelli, as broad as the prominent eyes; clypeus not basally discreted, apically truncate, margined and subreflexed, basal foveae broad and deeply impressed, apical half more coarsely sculptured; cheeks obsolete. Antennae stout and exactly filiform, not apically attenuate, pilose, and not longer than the body. Thorax stout, with the evenly punctate mesonotum nitidulous; metathorax short, dull and obsoletely reticulate, with no discal carinae; spiracles large and elongate. Scutellum strongly convex, evenly punctate, longer than broad, subparallel-sided and not laterally margined. Abdomen stout but not broad; basal segment smooth with its apical third subexplanate, pilose and finely punctate; anus subpubescent, terebra short and red. Legs neither slender nor elongate; all the coxae closely and finely punctate throughout. Wings ample and distinctly a little infumate, with a subcircular mark near centre of upper basal nervure, the whole radial cell except its base and an oblique streak in the radial cell of lower wings, strongly infumate; a small area immediately below stigma, base of radial cell in all wings and a streak throughout the lower basal and the brachial cells of upper wings, subhyaline; lower basal nervure antefurcal; radius evenly deflexed and subincrassate basally; nervellus strong and intercepted a little below its centre; stigma and basal nervures fulvous, apical ones black. Length, 17 mm. Female only.

Very distinct from the known species of this genus (Morley, Revis. Ichn., i, 1912, p. 5) in its lack of lateral frontal carinae, blotched wings, emission of nervellus and colour of thorax. The type was captured at Kaapmuiden in the Transvaal on 30th October, 1918, by R. W. E. Tucker.

Euryophion superbus, Morl.

Revis. Ichn., i, 1912, p. 6, ♂.

A ♂ of this large species has been bred from the hawk moth *Lophostethus dumolini*, Latr., from Salisbury, Southern Rhodesia.

Gen. PLEURONEUROPHION, Ashmead.

Proc. U.S. Nat. Mus., xxiii, 1900, p. 86.

Pleuroneurophion pruinosus, Cam.

Ann. S. Afr. Mus., v, 1906, p. 82, ♂♀.

Captured at Port St. Johns in Cape Province by G. Shortridge, and at Salisbury in Rhodesia during 1908.

Gen. HENICOSPILUS, Steph.

Illus. Brit. Ent., 1835, p. 126.

Henicospilus bisimpressus, Brulle.

Hist. Nat. Ins. Hym., iv, 1846, p. 148.

A ♂ bred from the Noctuid moth *Ophiusa mormoides*, at Durban, in Natal, on 2nd September 1907, by G. F. Leigh.

Henicospilus rubens, Tosq.

Mem. Soc. Entom. Belg., v, 1896, p. 382, ♀.

Captured by Dr. F. W. Purcell at Hanover in Cape Province during 1905.

Gen. OPHION, Fab.

Entom. Syst. Suppl., 1798, p. 210.

Ophion discinervus, sp. nov.

If the type of this species be not a freak, it is one of the most remarkable neurational modifications known, and quite unlike any of the multitudinous specimens enumerated in my Revision of the group in 1913. From all its relatives, this insect differs in having the discoidal cell produced below the stigma at almost an acute angle, from the apex whereof is emitted an elongate and very strong nervure four-fifths of the distance to the upper basal nervure. The remainder of the structure is normal, excepting perhaps the unusual crassity of all the nervures, and density of ungual pectination. Scutellum elongate and laterally margined. Length, 14 mm. ♂ only.

Taken at Durban in Natal, on 5th October 1908, by G. F. Leigh.

Gen. EURYCAMPTUS, Morl.

Rev. Ichn. Brit. Mus., i, 1912, p. 27.

Eurycamptus latipennis, Kirb.

From British East Africa, originally described from the Congo. Bred at the Museum from cocoons of the Saturnid moths *Bunaea caffraria*, *B. macrothyris*, from Southern Rhodesia (Salisbury), and at Salisbury from *Janomima westwoodi*, a Striphnopterygine moth, by Rev. J. O'Neil.

TRIBE PANISCIDES.

Gen. PANISCUS, Schr.

Fauna Boica, ii, p. 2, 1802, p. 316.

Paniscus testaceus, Grav.

Ichn. Europ., iii, 1829, p. 626.

Found at Bulawayo during February 1913, and at Salisbury during 1908.

Paniscus aethiopicus, Szepl.

Kil.-Meru Exped., 1910.

A female found at M'fongosi in Zululand by W. E. Jones considerably extends the range of this species.

Paniscus melanocotis, Holmgr.

One female from Salisbury in Southern Rhodesia on 7th May 1918.

TRIBE MESOCHORIDES.

Gen. MESOCHORUS, Grav.

Ichn. Europ., ii, 1829, p. 960.

Mesochorus nox, sp. nov.

♀. A small and shining black species with luteous markings, and abdominal disc subcircularly pale. Head finely and sparsely punctate, testaceous, with occiput, ocellar region, frons and mandibular apices black; clypeus short, broad, basally not discreted and apically truncate; mandibles stout and apically bidentate, with lower tooth the longer; palpi whitish. Antennae filiform, very slender, nigrescent and longer than body. Thorax with strong and discally coalescent notauli; prothorax entirely flavescent-testaceous; metathorax nitidulous and nearly smooth, with complete areae and lateral pubescence; basal area elongate and entire; areola diamond-shaped, longer than broad, apically acute, emitting strong costulae slightly before its centre; petiolar area discreted, not reaching metathoracic centre and pale testaceous throughout; lateral carinae strong, spiracles circular and not small. Scutellum convex, neither small nor laterally margined, very finely punctate, shining and testaceous with apex mutic, its base and glabrous basal fovea black. Abdomen fusiform with first segment narrowly before the base, second except basally and third except apically, luteous; postpetiole explanate, smooth, longitudinally impressed centrally and as long as the stout and black terebra, or fully a third of the abdominal length. Legs stout and pale testaceous with both extremities of the stramineous-white hind tibiae definitely, their coxae discally in the centre, and femora indefinitely, black; inner hind calcar two-thirds metatarsal length and distinctly longer than the outer. Wings hyaline, somewhat broad; radix whitish, stigma and nervures nigrescent; basal nervure continuous, and the upper curved radial cell broad; areolet large, obliquely quadrate and distinctly sessile, emitting recurrent nervure before its centre; discoidal cell basally subacute; nervellus opposite, straight and not intercepted. Length, 3 mm. ♀ only.

M'fongosi in Zululand during May 1917, by W. E. Jones. It is most closely allied to *M. pictilis*, Holmgr., though with the cheeks neither elongate nor striate.

9. *The Genus Eumenes, Latreille, in South Africa, with a Revision of the Ethiopian Species* (*Hymenoptera*).—By Dr. J. Bequaert, Department of Tropical Medicine, Harvard Medical School.

(With 14 Text-figures.)

The present paper is the second of the contemplated series on South African Diploptera. The genus *Eumenes* is so much better represented in South Africa than in the equatorial regions of the continent, that I have been induced to offer a revision of all Ethiopian species. I was thus enabled to correct several errors of my former work (Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 54–86), which should, however, be used in connection with the present paper, for the equatorial species.

I wish to acknowledge my indebtedness to the late Dr. L. Péringuey, former Director of the South African Museum, for the loan of much material. I am under especial obligation to Dr. H. Brauns, of Willowmore, who very kindly entrusted me with the valuable types of some species described by A. v. Schulthess. A few specimens were received for study from Dr. G. Arnold, Curator to the Rhodesia Museum, and some of the Katanga material was collected by my brother, Dr. Michael Bequaert. During a brief visit at the British Museum, I had occasion to examine a number of interesting specimens mentioned in the paper, and I have also included records from the collections of various other institutions. Finally, I desire to thank Dr. E. L. Gill for the editing in the Annals of the South African Museum.

For a general account of the characters and life-history of the genus, I refer to my Revision of Congo Vespidae quoted above. So far as I can see, the habits of none of the peculiarly South African species have been studied thus far, so that a wide field of discovery here awaits some enterprising South African entomologist.

Many of the South African species appear to be quite local or very rare, and additional forms will certainly still come to light, while others are thus far known in one sex only. The entomologist who wishes to understand specific limits in *Eumenes* should learn to disregard the colour pattern, which not only is often extremely variable, but, in addition, is frequently almost identical in species that are morphologically quite distinct. In closely allied forms, the shape of the first abdominal segment and especially of the terminal hook of the male antenna appear to afford the most reliable characters. Since the differences are rather difficult to describe, the outline drawings may prove of some help. Descriptions of supposedly new species, based on colour markings alone, are practically worthless, as it is impossible to recognise them without having access to the types.

The generic distinction between *Eumenes* and *Pachymenes*, although purely arbitrary, fortunately entails no great difficulty so far as the Ethiopian fauna is concerned. In *Pachymenes*, the first tergite of the abdomen is short and funnel-shaped, as a rule shorter than the second; in *Eumenes* it forms a slender petiole, which is at least as long as the second tergite. The Ethiopian *Pachymenes* are all of small size, at most 10 mm. in total length. In size and general appearance *Pareumenes* approaches *Eumenes* rather closely, but the first tergite is moderately long and triangular in outline, seen from above; in profile it is abruptly sloping just before the base, where it presents a blunt ridge or crest, often followed by a slight constriction. Of the two African species (one of which is as yet undescribed), one shows a sharp and long spine on each side of the propodeum, above the valvulae, which, however, is totally absent in the other. These propodeal spines are not found in any *Eumenes*, and have sometimes been regarded as a generic character of *Pareumenes*, but they are absent in several of the Indian species of *Pareumenes* too. Formerly, when the genus was known to me from descriptions only, I had placed *Pareumenes* among the Zethinae. I have since had occasion to examine several species, and find that in all of them the mandibles are distinctly decussate and knife-shaped, as in the Eumeninae. In some they are hardly different from those of *Eumenes*, while in others they are much broadened and probably adapted to nesting in wood. The two types of mandibles are represented by the two African species.

I have followed J. Sichel[1] in regarding *Eumenes* as of masculine gender. The use of *Omicron* and *Delta* as subgeneric names will probably be questioned by entomologists who study linguistics rather than insects. Since, however, similar Greek letters have been commonly accepted as specific names, while some of them are used as generic names in other groups, I fail to see why they should be rejected in the Vespidae.

[1] "Note sur le sexe des noms génériques *Polistes*, *Eumenes* et des autres noms génériques terminés en *es*," Ann. Soc. Ent. France, (4) iii, 1863, pp. 20–22.

Subdivisions of Eumenes.

After eliminating *Pachymenes* and *Pareumenes*, *Eumenes* still contains over 200 described species, many of which differ greatly in shape. If the fauna of a limited area be considered, they are rather easily arranged in natural groups, but whether these are of sufficient value to be regarded as valid subgenera is a troublesome question. Since, however, some have been named, I shall provisionally give them subgeneric rank. As I wish to introduce new names for three of the groups, a brief review of the nomenclature is appended.

1. **Eumenes,** Latreille, Hist. Nat. Crust. Ins., iii, 1802, p. 360. Genotype : *Vespa coarctata*, Linnaeus, 1758, as designated by Latreille, Considér. Génér. Crust. Arachn. et Ins., 1810, p. 438 ; by Bingham, Fauna of British India, Hym., i, 1897, p. 333 ; and by Ashmead, Canad. Entomol., xxxiv, 1902, p. 207.[1]

Syn. : *Eumenes* 1ère division, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 28.

Eumenes division *Alpha*, H. de Saussure, Et. Fam. Vesp., iii, 1856, p. 128. Type by present designation : *Vespa coarctata*, Linnaeus, 1758.

Eumenes subgenus *Eumenidion*, A. v. Schulthess, Societas Entomol., xxviii, 1913, p. 2. Type by original designation : *Vespa coarctata*, Linnaeus, 1758.

The subgenus *Eumenes* proper should cover the group containing the genotype, and consequently *Eumenidion* is an exact synonym of *Eumenes* proper. I can, therefore, not follow v. Schulthess where he uses " *Eumenes* s. str." for the group of *E. maxillosus* (Zool. Jahrb. Abt. Syst., xxxvii, 1914, p. 262).

Medium-sized species, with strongly convex, subglobular thorax ; no epicnemial anterior carina and no longitudinal keel on the posterior part of the mesopleura. Head moderately flattened ; mandibles decussate, long and straight, slightly notched along the inner margin. First abdominal segment variously shaped, often more or less campanulate ; with a basal, narrow, stalk-like portion, followed by a much broader apical part. Apex of second tergite duplicate : the hind margin proper forming a thin, depressed, and smooth lamella, which is preceded by a much thickened portion ; the two are separated by a deep groove, which is generally foveolate.

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[1] Westwood (Introd. Modern Class. Insects, II, Synopsis, 1840, p. 83) gives as type *Vespa atricornis*, Fabricus, which is generally regarded as a probable synonym of *Vespa coarctata*, Linnaeus. Moreover, his designation had been anticipated by Latreille (1810).

This is the common type in the Palaearctic and Nearctic regions, where it is represented by several closely allied species. In the Oriental region it contains *F. punctatus*, de Saussure, and in the Ethiopian region, *E. braunsianus*, A. v. Schulthess, *E. lucasius*, de Saussure, *E. acuminatus*, de Saussure, *E. capensis*, A. v. Schulthess, *E. fülleborniamus*, A. v. Schulthess, *E. peringeyanus*, A. v. Schulthess, *E. langi*, J. Bequaert, *E. arnoldi*, J. Bequaert, *E. oculihirtus*, J. Bequaert, and *E. pomiformis* (Rossi).

The following groups are in my opinion not sufficiently distinct from *Eumenes* proper to warrant their use in a subgeneric sense :—

Eumenes division *Beta*, H. de Saussure, Synopsis of American Wasps, 1875, p. 88. Type by present designation : *Eumenes nortonianus*, de Saussure, 1875.

Eumenes division *Gamma*, Zavattari, Arch. f. Naturgesch., lxxviii, Abt. A, Heft 4, 1912, p. 85. To cover "*Pachymenes* II^e division" of de Saussure, Et. Fam. Vesp., i, 1852, p. 77. Type by present designation : *Pachymenes ventricosa*, de Saussure, 1852.

2. Subgenus Omicron, H. de Saussure. Type by present designation : *Zethus globicollis*, Spinola, 1841.

Syn. : *Eumenes* VI^e division, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 71.

Eumenes division *Omicron*, H. de Saussure, Et. Fam. Vesp., iii, 1856, p. 133.

Small species, with extremely globular and convex thorax. Mesopleura anteriorly with a distinct epicnemial carina, which continues on the sternum in front of the middle coxae ; without vertical keel posteriorly. Head much flattened ; mandibles relatively short, decussate, slightly curved at apex and strongly toothed within. First abdominal segment long and strongly campanulate : the basal, stalk-like portion quite slender and suddenly widened into the apical, bell-shaped part. Apex of second tergite duplicate, as in *Eumenes* proper.

Although in the shape of head, thorax, and first abdominal segment there are transitional forms to *Eumenes* proper, I retain this group as a subgenus on the strength of the presence of an epicnemial carina on the mesopleura. So far as known to me, this subgenus is exclusively Neotropical.

3. Subgenus Afreumenes, J. Bequaert. Monotypic for *Eumenes melanosoma*, H. de Saussure, 1852.

Medium-sized, with moderately convex and subglobular thorax. Mesopleura anteriorly with an epicnemial suture continuing on the sternum in front of the middle coxae; and posteriorly with a sharp laminate keel forming an epicnemial area for the middle legs. Head flattened; mandibles long, straight, parallel, beak-like, slightly notched along the inner margin. First abdominal segment long and slender, gradually widened from base to apex, longitudinally grooved above. Apex of second tergite simple.

This subgenus is exclusively Ethiopian.

4. Subgenus Delta, H. de Saussure. Type by present designation: *Vespa maxillosa*, de Geer, 1775.

Syn.: *Eumenes* II^{e} division, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 44; and III^{e} division, *op. cit.*, p. 60.

Eumenes division *Delta*, H. de Saussure, Et. Fam. Vesp., iii, 1856, p. 130.

Medium-sized to large species, with moderately convex, ovate or lengthened thorax; mesopleura with or without anterior epicnemial carina, but without posterior keel. Head moderately flattened; mandibles long, straight, parallel, beak-like, slightly notched along the inner margin. First abdominal segment long and slender, stalk-like, but always wider at apex than at base. Apex of second tergite simple or slightly thickened before the margin.

This subgenus is almost cosmopolitan in distribution, but apparently does not occur in the Nearctic region. The following Ethiopian species belong to it: *F. maxillosu s*(de Geer), *E. caffer* (Linnaeus), *E. campaniformis* (Fabricius), *E. phthisicus*, Gerstaecker, *E. lepeleterii*, H. de Saussure, *E. alluaudi*, J. Pérez, and *E. macrocephala*, H. de Saussure.

The following two groups are connected with the subgenus *Delta* by so many transitional forms that it appears impractical to accord them subgeneric rank:—

Eumenes division *Phi*, H. de Saussure, Et. Fam. Vesp., iii, 1856, p. 132. To cover *Eumenes* IV^{e} division of de Saussure, Et. Fam. Vesp., i, 1852, p. 63. Type by present designation: *Vespa arcuata*, Fabricius, 1775.

Eumenes division *Zeta*, H. de Saussure, Et. Fam. Vesp., iii, 1856, p. 132. To cover *Eumenes* V^{e} division of de Saussure, Et. Fam. Vesp., i, 1852, p. 67. Type by present designation: *Sphex abdominalis*, Drury, 1770.

5. Subgenus Zetheumenidion, J. Bequaert. Type: *Eumenes femoratus*, A. v. Schulthess, 1910.

Medium-sized, with ovate, broad, and moderately convex or flattened thorax; mesopleura without anterior epicnemial suture or posterior carina; anterior margin of pronotum with a lamellate crest. Head but slightly flattened; mandibles short, decussate, strongly ribbed on the outer face, with four sharp teeth along the inner margin. Vertex with hairy fovea in female. First abdominal segment very slender and ribbon-shaped. Apex of second tergite duplicate, the terminal lamella often raised and collar-like. Hind femora of male swollen; middle and hind tibiae of female with spinose setae.

This peculiar group consists of two Ethiopian species. It strongly suggests the Zethinae in general appearance, but the mandibles are still as in *Eumenes*. The venation of the wing is as in the Eumeninae, the second cubital cell being lozenge-shaped and its lower or cubital margin being but slightly deflected where it receives the first recurrent nervure. In the Zethinae the first section of the lower margin of the second cubital cell is usually placed vertically upon the first recurrent nervure, which runs almost in a straight line with the remainder of the cubitus.

On account of the rather short mandibles, *Ischnogasteroides*, Magretti (Bull. Soc. Ent. Italiana, xv (1883), 1884, p. 251; Ann. Mus. Civ. Genova, xxi, 1884, p. 603), appears to be related to *Zetheumenidion*, and I have little doubt that it, too, represents a group of Eumeninae, perhaps not really distinct from *Eumenes*. The only species, *Ischnogasteroides flavus*, Magretti, of Abyssinia, has apparently not been found again. It is, however, quite possibly identical with *Eumenes leptogaster*, F. Walker (List of Hymenoptera collected by J. K. Lord in Egypt, 1871, p. 30), of which I have seen the type (♂) and two other males, from Wady Ferran (=Wady Faran in the Peninsula of Sinai), in the British Museum. It is about the size of *E. femoratus*, but extremely slender; not only is the first abdominal segment very long and thin, but the second is narrowed at the base into a long neck, as in *Paramischocyttarus*. Yet the shape of the mandibles leaves no doubt as to its being a *Eumenes*. It will undoubtedly form a distinct subgenus, for which Magretti's name *Ischnogasteroides* will perhaps be available. For this reason I refrain from proposing a new term.

6. Subgenus Oreumenes, J. Bequaert. Monotypic for *Eumenes harmandi*, J. Pérez, 1905.

Medium-sized species; mesopleura without anterior epicnemial suture or posterior carina. Mandibles of the usual *Eumenes* type. Vertex without hairy fovea in female. Antennae 12-segmented in female; 13-segmented in male, the last segment short, of normal shape, not forming a recurved hook. Hind margin of second abdominal tergite slightly duplicate.

The unusual shape of the male antennae, which I have observed in several specimens of *E. harmandi*, from Japan and China, was noted by Pérez in his original description.

Key to Ethiopian Species of Eumenes.

1. ♀♂. Mesopleura with epicnemial carinae anteriorly, and, in addition, posteriorly with a lamellate keel bordering epicnemia for the middle legs. First abdominal segment quite slender, longer than the thorax, distinctly curved in profile; with a shallow, longitudinal groove on its dorsal, flattened face; the groove more distinct apically. Second tergite moderately swollen, with slightly depressed, simple, impunctate hind margin. Clypeus not emarginate, subtruncate at apex, with the edges broadly rounded off. Antennae slender; all the segments longer than broad; terminal hook of male moderately long, unguiculate, rather suddenly narrowed before the middle into a sharp apex. Length (h. + th. + t. 1 + 2): ♀, 13–19 mm.; ♂, 9·5–15 mm.

E. melanosoma, H. de Saussure (p. 526)

Mesopleura without raised keel in their posterior half; the epicnemial depression for the middle legs not margined 2

2. Apex of second tergite duplicate: the smooth, flattened or raised marginal lamella separated by a foveolate groove from a preapical thickened area 3

Apex of second tergite simple: the depressed margin impunctate, but not divided from the preapical punctate area by a groove . . . 12

3. Anterior margin of pronotum with a collar-like, raised, translucent lamella. Mandibles short and stout, decussate, strongly ribbed and deeply grooved on the outer surface, with four stout teeth along the inner margin. Vertex long, with a hairy fovea in the female. Legs stout; hind femora of male conspicuously swollen, their lower, posterior face bearing a short spine; middle and hind tibiae of female with rows of short, stiff setae. Apical lamella of second tergite often more or less collar-like, preceded by a deep groove, which bears many longitudinal short ribs 4

Anterior margin of pronotum either rounded off or with a low, linear carina, not with a translucent lamella. Mandibles generally more slender, but superficially grooved on the outer surface. Vertex without hairy fovea in female. Legs slender, the femora not thickened and without spine in the male; the tibiae of the female without stiff setae. Apical lamella of second tergite flattened 5

4. ♀♂. Thorax coarsely and uniformly punctate, distinctly convex dorsally, not appreciably depressed, in profile about one and one-half times as long as high; the scutellum and postscutellum distinctly sloping and the short propodeum much below the level of the mesonotum. First abdominal segment flattened dorsally. Clypeus of female truncate at apex. Hind femora of male much swollen, the tooth of the hind face placed in a deep, oblique groove. Length (h. + th. + t. 1 + 2): ♀, 14–15 mm.; ♂, 12·5 mm.

E. femoratus, A. v. Schulthess (p. 493)

♀♂. Thorax less coarsely punctured, more shiny, much depressed and but little convex above, in profile about two and one-half times as long as high; the scutellum and postscutellum part of the dorsal face of the thorax; the

propodeum quite long, its anterior, slightly sloping portion but little below the level of the mesonotum. First abdominal segment not flattened dorsally. Clypeus of female shallowly emarginate at apex. Hind femora of male moderately swollen, the spine of the hind face not placed in an oblique groove. Length (h.+th.+t. 1+2): ♀, 16-16·5 mm.; ♂, 12·5 mm.
E. paeneplanus, J. Bequaert (p. 498)

5. ♀♂. Second abdominal segment much swollen, bell-shaped and somewhat compressed, about as high as long in profile; the tergite pinched before the preapical swelling, being slightly raised in the middle with a shallow depression on each side. First segment about three and one-half times as long as wide, nearly parallel-sided in the apical half and with a trace of longitudinal groove above; the basal third much narrower. Clypeus nearly impunctate, the apical margin slightly sinuate in female, nearly straight in male. Length (h.+th.+t. 1+2): ♀, 13·5–14·5 mm.; ♂, 13 mm.
E. braunsianus, A. v. Schulthess (p. 502)

Second tergite not pinched on the middle before the preapical swelling, either normally convex or with a transverse depression 6

6. ♀♂. Second abdominal segment much swollen dorsally, bell-shaped and distinctly compressed; about as high as long in profile and distinctly higher than wide; the tergite with a shallow, transverse depression before the preapical swelling. First segment very long and slender, about as long as head and thorax, four and one-half to five times as long as wide, quite gradually widening from the base to the middle, not grooved above except before the apex. Clypeus deeply emarginate at apex in both sexes. Eyes bare. Length (h.+th.+t. 1+2): ♀, 12–13·5 mm.; ♂, 11 mm.
E. peringeyanus, A. v. Schulthess (p. 505)

Second abdominal segment much less swollen and but slightly or not compressed, generally as long as or longer than high in profile. In doubtful cases the first segment has a different shape, or the clypeus is not deeply emarginate at apex, or the eyes are pubescent 7

7. ♀♂. Small species. Second abdominal segment swollen and bell-shaped, but not compressed, with strongly duplicate hind margin; the posterior half of the tergite coarsely punctate (abnormally wrinkled in the type specimen of the var. *langi*). First segment about as long as head and thorax; the apical two-thirds ribbon-shaped, parallel-sided, flattened above; gradually narrowed into the basal third. Clypeus broadly emarginate at apex in both sexes. Black, with very few yellowish-white markings, and occasionally partly ferruginous; clypeus black in both sexes. Length (h.+th.+t. 1+2): ♀, 8–11·5 mm.; ♂, 7–9 mm. . *E. fülleborniänus*, A. v. Schulthess (p. 509)

Larger species, with differently shaped first and second abdominal segments 8

8. ♀♂. Eyes densely covered with long pubescence. Anterior margin of pronotum with a fine raised line, which is completely effaced in the middle. First abdominal segment very slender, about as long as head and thorax, flattened above and slightly grooved toward apex, sparsely and finely punctate. Length (h.+th.+t. 1+2): ♀, 13–14 mm.; ♂, 12–13 mm.
E. oculihirtus, J. Bequaert (p. 511)

Eyes bare 9

9. ♀♂. Anterior margin of pronotum blunt, with a mere trace of raised line, broadly rounded off at the sides. First abdominal segment moderately

long, about as long as the thorax; the basal stalk very gradually widened into the apical half, which is parallel-sided, somewhat flattened and slightly grooved above. Head and thorax densely hairy; rather coarsely punctate, densest on the mesonotum, not subreticulate on the mesopleura; punctures of first segment large, but scattered; of the second tergite finer, but very dense, uniformly covering the whole surface. Length (h.+th.+t. 1+2): ♀, 11–12 mm.; ♂, 9–11 mm. . . *E. lucasius*, H. de Saussure (p. 514)

Anterior margin of pronotum rimmed throughout with a raised line which, although low, is quite distinct; humeral angles obtuse. First abdominal segment of different shape 10

10. ♀♂. First abdominal segment campanulate, about as long as the thorax; not three times as long as its greatest width; with a short stalk; the apical two-thirds much widened and swollen, coarsely punctured all over and with shallow longitudinal groove. Vertex and temples long. Median part of propodeum broadly and very shallowly concave. Black, with bright yellow markings only; the second tergite with apical fascia and two lateral, oblique spots near the middle. Length (h.+th.+t. 1+2): ♀, 10·5–12 mm.; ♂, 9–11 mm. . . . . . . *E. pomiformis* (Rossi) (p. 501)

First abdominal segment not campanulate, much more slender. Vertex and temples short. Median part of propodeum distinctly grooved in its lower half. Mostly black and ferruginous, with few pale yellow markings; no yellow spots near middle of second tergite 11

11. ♀♂. First abdominal segment moderately slender, less than four times as long as wide at apex, nearly as long as the thorax; the basal, stalk-like third rather abruptly widened into the parallel-sided apical portion, which is flattened and distinctly grooved dorsally. Head and thorax densely hairy, closely and coarsely punctate; the mesopleura subreticulate. Antennae distinctly thickened: the fifth segment (in female) but slightly longer than wide, the sixth nearly square. Length (h.+th.+t. 1+2): ♀, 12 mm.; ♂, 10·5 mm. . . . *E. acuminatus*, H. de Saussure (p. 520)

♀. First abdominal segment long and slender, about five times as long as wide at apex, much longer than the thorax; gradually widening from base to apex; the apical portion not parallel-sided, slightly flattened above and grooved toward the apex only. Thorax but slightly pilose; its punctuation moderately coarse and dense, the mesopleura not subreticulate; a row of fine, longitudinal rugosities at base of postscutellum. Antennae moderately thickened: the fifth segment distinctly and the sixth slightly longer than wide. Length (h.+th.+t. 1+2): 12 mm. Male unknown.
E. arnoldi, J. Bequaert (p. 517)

12. ♂. Head swollen; vertex and temples well developed, the posterior ocelli nearly as far from the hind margin of the vertex as from each other. Apical margin of clypeus straightly truncate. Legs stout; the middle basitarsus broad, forming a flattened prism. First abdominal segment elongate campanulate, about three times as long as its greatest width, longitudinally grooved in its apical half. Antennal hook large, narrowly spatulate, pointed at apex, with a blunt dorsal ridge. Length (h.+th.+t. 1+2): 14 mm. Female unknown . . . *E. macrocephala*, H. de Saussure (p. 568)

Head not swollen; vertex and temples short (except in *alluaudi*). Legs slender; the middle basitarsus of male not broadened. First abdominal segment not longitudinally grooved. Antennal hook of male of different shape 13

13. ♀♂. First abdominal segment quite long and slender, about as long as head and thorax and nearly five times as long as wide at apex; very gradually widened from base to near apex, strongly curved in profile; the spiracles hardly protuberant. Second segment with a long basal neck. Abdomen almost impunctate. Antennal hook of male shaped like a duck's head, swollen in basal half, suddenly narrowed, with blunt apex. Length (h.+th.+t. 1+2): ♀, 15–16 mm.; ♂, 13·5–15·5 mm.
E. phthisicus, Gerstaecker (p. 531)

First abdominal segment shorter, less than five times as long as wide; always much broader at apex than at base and generally with protuberant spiracles. Basal neck of second segment short 14

14. Thorax distinctly longer than wide or high. First abdominal segment about as long as, or even slightly shorter than, the thorax; more or less abruptly widened near the middle 15

Thorax but little longer than wide or high. First abdominal segment longer than the thorax 17

15. Female: Clypeus elongate pear-shaped; the apical, free portion lengthened, slightly longer than the basal, interocular part, straightly truncate at apex; posterior ocelli about as far apart as from the inner orbits. Male: Clypeus much longer than wide, produced below into a rectangular plate which is somewhat widened at apex; inner margin of mandibles raised into a fold near base. Length (h.+th.+t. 1+2): ♀, 14–18 mm.; ♂, 17–21 mm.
E. alluaudi, J. Pérez (p. 567)

Clypeus shorter, elongate hexagonal; the apical, free portion slightly shorter than the basal, interocular part and not produced into a rectangular plate in the male. Posterior ocelli nearer to the inner orbits than to each other 16

16. ♀♂. Second abdominal sternite uniformly convex, slightly flattened at base. Posterior ocelli of female about as far from the hind margin of the vertex as from the inner orbits. Antennae of female relatively swollen; segments 7 and 8 nearly square and 9 to 11 wider than long. Antennal hook of male gradually tapering from a triangular base to a sharp, straight apex. Length (h.+th.+t. 1+2): ♀, 19–20 mm.; ♂, 13–18 mm.
E. caffer (Linnaeus) (p. 535)

♀♂. Second abdominal sternite more or less flattened or depressed in the middle, often deeply saddle-shaped. Posterior ocelli in both sexes nearer to the inner orbits than to the hind margin of the vertex. Antennae of female more slender: segments 7 and 8 slightly longer than wide, 9 and 10 almost square, 11 slightly wider than long. Antennal hook of male long and thick, curved beyond the base and swollen in its terminal half, ending in a sharp, curved apex. Length (h.+th.+t. 1+2): ♀, 17–30 mm.; ♂, 12–23 mm. . . . . . . *E. maxillosus* (de Geer) (p. 559)

17. ♀♂. First abdominal segment seen from above quite gradually widening from base to apex. Antennal hook of male long and slender, gradually tapering from a triangular base to a sharp apex, which is slightly curved and rests in a small pit at the under side of the tenth antennal segment. Length (h.+th.+t. 1+2): ♀, 17–19 mm.; ♂, 12–16 mm.
E. lepeleterii, H. de Saussure (p. 553)

♀♂. First abdominal segment seen from above rather suddenly widened about midway; both the basal, stalk-like and the apical, wider portion nearly parallel-sided. Antennal hook of male long, but thicker, slightly narrowed beyond the base, the apical half somewhat widened and rather rapidly tapering to the sharp, curved apex, which rests in an excavation at the under side of the tenth antennal segment. Length (h.+th.+t. 1+2): ♀, 12–18·5 mm.; ♂, 12–16·5 mm. . *E. campaniformis* (Fabricus) (p. 538)

E. capensis, A. v. Schulthess, *E. higletti*, Meade Weldo, and *E. signicornis*, F. Walker, which are not known to me, have not been included in the foregoing key.

The following species should be eliminated from the list of Ethiopian *Eumenes*:—

Eumenes bisignatus, F. Walker, 1871, described from "Wady Ferran," which is in the Sinai Peninsula.

Eumenes dilectula, F. Walker, 1871, described from "Wady Genneh," probably in the Sinai Peninsula or in Lower Egypt.

Eumenes dyscherus, E. de Saussure. As explained below, this is a South American wasp.

Eumenes elegans, H. de Saussure. This was described from Arabia and the East Indies; it is discussed in the sequel in connection with *E. esuriens* var. *gracilis*, H. de Saussure.

Eumenes leptogaster, F. Walker, 1871, described from "Wady Ferran," which is in the Sinai Peninsula.

Eumenes maculinoda, P. Cameron, 1910 (♂). Owing to the small size (total length, 7 mm.) and the short first abdominal segment, this is probably a *Pachymenes* or *Labus*.

Eumenes ornativentris, P. Cameron, 1910 (♀). This may be the female of *maculinoda*, and is likewise either a *Pachymenes* or a *Labus*.

Eumenes rufolineata, P. Cameron, 1905. This is also, in my opinion, either *Pachymenes* or *Labus*.

Subgenus Zetheumenidion, J. Bequaert.

Eumenes femoratus, A. v. Schulthess.

(Text-figure 1.)

Eumenes femoratus, A. v. Schulthess, Soc. Entomol., xxv, 1910, p. 18 (♀♂). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 276.

Eumenes pulchripennis, P. Cameron, Ann. Transvaal Mus., ii, pt. 3, 1910, pp. 158 and 160 (♀).

Female.—Head seen in front about as broad as high. Clypeus nearly as wide as long, almost hexagonal in outline, strongly convex in its posterior half and rather suddenly sloping to the flattened anterior third; the anterior, free portion as long as the basal, interocular part; the apical margin nearly squarely truncate, with bluntly rectangular edges, measuring about one-third of the total width of the clypeus. Vertex with a small, hairy, transverse fovea a short distance from the hind margin. Vertex and temples longer than usual, margined behind with a sharp, continuous rim; the posterior ocelli somewhat nearer to the inner orbits than to the hind margin of the vertex. Ocelli placed in a slightly flattened triangle, the posterior ones a trifle closer to each other than to the inner orbits, the anterior one larger. Front unusually wide between the antennae, with a very slight median swelling in which terminates a short, upper furrow. Eyes bare, but little farther apart on the vertex than at the clypeus. Mandibles moderately long and rather wide, though still knife-shaped as in other *Eumenes*; straight, with distinctly curved apex, and four strong, triangular teeth along the inner margin; their outer surface with two wide grooves separated by a median, duplicate rib; similar ribs run a short distance from the inner and outer margin; in the groove along the outer margin there is a regular row of rather long, stiff, pale setae, directed downward. Maxillary palpi 6-segmented, labial palpi 4-segmented; the several segments shorter and thicker than usual; the last segment of the labial palpi less than half the length of the preceding. Antennae rather short and stout, the flagellum almost uniformly thickened; segments 6 and 7 nearly square, 8 to 11 slightly wider than long, 12 a little longer than wide at base. Thorax elongate oval, about one and one-half times as long as high seen in profile; a little less than one and one-half times as long as wide seen from above. Pronotum squarely truncate anteriorly; the margin with a strongly raised crest, forming a translucent, somewhat collar-shaped lamella; the humeral angles obtuse and but little prominent, the pronotum being much narrower at the anterior margin than before the base of the wings. Mesonotum slightly convex, about as long as wide, with a median, longitudinal line in its anterior half. Scutellum and postscutellum flattened and gently rounded off, being in the posterior slope of the thorax; the scutellum with a fine, median, impressed line. Propodeum short and moderately convex, its upper portion sloping, its lower portion nearly vertical; divided by a linear furrow in its upper half, somewhat more broadly but quite shallowly grooved posteriorly; its sides quite evenly rounded off. Mesopleura without carinae along the epicnemial depressions for the fore and middle legs; these depressions unusually well marked. Legs short and stout; outer surface of middle and hind tibiae with several irregular rows of stout, stiff, pale-coloured setae, and their apex on the outer side with a dense comb of pale spines. Middle tibiae with one spur. Claws with an inner tooth shortly before the apex. Wings short and wide; the radial cell shorter and higher than usual in *Eumenes* and the second cubital cell more triangular in outline, with shorter radial margin; the third cubital cell about as long as the second along the cubitus; the basal vein ends in the subcosta quite close to the stigma (in most other *Eumenes* considerably before). First abdominal segment long and slender, about as long as the thorax, about seven times as long as its greatest width seen from above; in profile but little and quite gently curved, uniformly thick throughout, except near the base; dorsally it is distinctly flattened and more or less ribbon-shaped, though

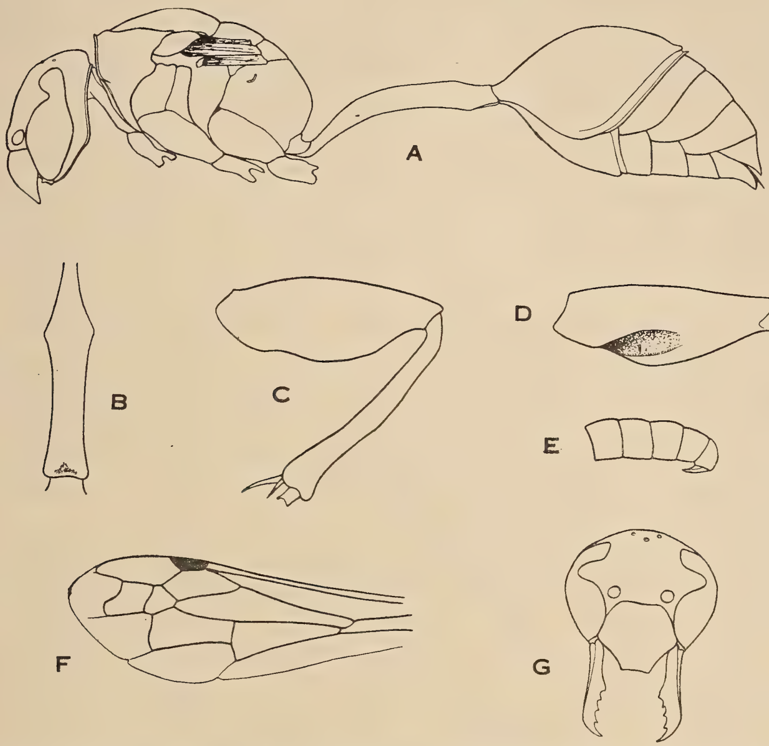

Fig. 1.—*Eumenes femoratus*, A. v. Schulthess. *A*, female in profile; *B*, first tergite of female from above; *C*, anterior view of hind femur and tibia of male; *D*, hind femur of male from below; *E*, terminal segments of male antenna; *F*, fore wing of male; *G*, anterior view of head of female.

widened at the apex and somewhat more so in the basal third, where the spiracles form well-marked protuberances on the sides; there is a distinct longitudinal groove over the basal half. Second segment with a short but distinct basal neck, regularly campanulate, the tergite but little more convex than the sternite, distinctly longer than high in profile and slightly longer than wide from above, not in the least compressed; the hind margin of sternite and tergite conspicuously duplicate; the apical lamella translucent, smooth, somewhat upturned and more or less collar-like; the preapical swelling quite conspicuous, followed by a deep, transverse channel with a series of short ribs; base of second sternite flattened, but not depressed. Puncturation coarse and dense on the thorax, somewhat finer but still more dense on the head; the clypeus very coarsely punctate; tegulae with a number of deep and large punctures and a small, smooth area near the outer margin. The hind corners of the mesonotum have a short smooth space on each side above the tegulae, connected with the smooth post-tegulae. First tergite with minute, scattering punctures, which are much larger and deeper on the anterior half in the middle. Second segment almost impunctate, except before the preapical swelling, where there are a series of very large and deep punctures, more abundant in the middle than on the sides. Succeeding segments impunctate. Pubescence very sparse, except on the head and propodeum, where it is greyish-white.

Black, abundantly marked with ferruginous red as follows: clypeus (somewhat orange), mandibles (with more brownish apex and teeth), antennae (the four apical segments brownish above), a spot at the bottom of ocular sinus, an elongate spot in the upper part of the temples, pronotum (the extreme lower edges black), tegulae, the upper plate of the mesopleura, scutellum, postscutellum, propodeum (except for black margins and median line), legs, sides and apex of first segment quite broadly, second sternite (except for a wide, longitudinal, black band not reaching the apex), second tergite (except for a broad, median, triangular black spot, which is drawn out into a point in the middle toward the basal neck), and ill-defined apical bands on some of the succeeding segments. Often the black is more extensive, the pronotum, scutellum, and upper plate of the mesopleura being blotched with that colour; the basal neck of the second segment may be entirely black and connected by a wide band with the black area of the second tergite. At the apex of the first and second tergites the ferruginous sometimes shades into orange. Hind tibiae rather broadly yellowish along the outer surface. Wings decidedly smoky throughout, somewhat darker anteriorly, with beautiful purplish and golden reflections, the costa amber-coloured ; remaining nervures and stigma blackish brown.

Length (h.+th.+t. 1+2) : 14 to 14·5 mm.

Male.—Clypeus decidedly longer than wide ; the apical, free part slightly longer than the interocular portion ; apical margin about half the width of the clypeus, distinctly though shallowly emarginate, with sharp edges. Vertex without fovea. Inner orbits but slightly farther apart on the vertex than at the clypeus. Posterior ocelli about as far from each other as from the inner orbits, but considerably farther from the posterior margin of the vertex. Antennae rather short and thick ; the flagellum gradually thickened toward the apical half ; segments 6 and 7 almost square ; 8 to 12 wider than long ; terminal hook short and thick, straight, very sharply pointed from the very base, triangular in profile, flattened and obtusely rounded off at apex when seen from above, reaching to near the base of the eleventh antennal segment. Legs short and conspicuously thickened, especially the femora. Hind femora much swollen, spindle-shaped, about three times as long as greatest width and but little flattened ; in the basal half the under side shows an oblique, broad groove, which does not reach the base and bears in its middle a short and heavy translucent spine. The hind tibiae are somewhat curved and gradually swollen in their apical half. Claws deeply bifid before the apex. Last sternite slightly flattened, uniformly and densely punctate. Clypeus yellow ; a yellow spot on the ferruginous upper plate of the mesopleura, just below the base of the wing ; outer side of tibiae broadly yellow. The remainder as in the female.

Length (h.+th.+t. 1+2) : 11·5 mm.

Orange Free State : Bothaville, 1 ♂, November 22, 1898 (H. Brauns).

Transvaal : Johannesburg, 1 ♀ (G. Kobrow).

Cape Province : Stellenbosch, 1 ♀, November 1887 (L. Péringuey), S.A. Mus.

The species was originally described from Lobatsi, Bechuanaland, and Grootfontein, South-West Africa. The female of Johannesburg (in Dr. Brauns' collection) is labelled " type," and the female of Stellenbosch (in the South African Museum) " cotype " ; but these specimens were not mentioned in the original description, although they have been identified by Dr. v. Schulthess. Cameron's *E. pulchripennis* was described from Kranspoort, Transvaal ; a specimen thus named by Cameron, in the Stockholm Museum, was recognised as *E. femoratus* by v. Schulthess (Ark. f. Zool., viii, No. 17, 1913, p. 14), and there is nothing in Cameron's description that does not agree with such identification.

Eumenes paeneplanus, new species.

(Text-figure 2.)

Female.—Head seen in front about as broad as high. Clypeus slightly wider than long, forming a flattened hexagon in outline, moderately but rather suddenly convex in the centre, slightly flattened before the anterior margin; the anterior, free portion about as long as the basal, interocular part; the apical margin measuring about one-third of the total width of the clypeus, shallowly and evenly, though quite distinctly emarginate, with prominent, bluntly triangular edges. Vertex with a small, hairy, transverse fovea a short distance from the hind margin. Vertex and temples quite long, even longer than in *E. femoratus*, margined behind with a sharp, continuous rim; the posterior ocelli about one and one-half times as far from the hind margin of the vertex as from the inner orbits. Ocelli placed in a slightly flattened triangle, the posterior ones distinctly closer to each other than to the inner orbits, the anterior one larger. Front unusually wide and almost flat between the antennae, with the merest trace of swelling and longitudinal, impressed line above. Eyes bare, about as far apart at the clypeus as on the vertex. Mandibles shaped as in *E. femoratus*, externally ribbed and grooved, and with the row of stiff, pale setae along the outer margin; the apex, however, is hardly curved and quite obtuse, while the teeth along the inner margin are oblique and blunt. Maxillary and labial palpi as in *E. femoratus*. Antennae quite short and stout, the flagellum more distinctly swollen in the apical half than in *E. femoratus*; segments, 7 nearly square, 8 to 11 distinctly wider than long, 12 about as long as wide at base. Thorax quite elongate and depressed; conspicuously flattened on the dorsal as well as on the ventral side; about two and one-half times as long as high in profile; quite wide seen from above, being less than one and one-half times as long as wide. Pronotum very broadly and squarely truncate anteriorly; margined with a collar-shaped, translucent, pale lamella, which is much more pronounced than in *E. femoratus*; laterally the lamella is evenly curved backward, so that the humeral angles, though well marked, are quite blunt; the pronotum is but slightly narrower anteriorly than before the base of the wings. Mesonotum quite slightly and very evenly convex, about as long as wide, with a median, smooth line in its anterior third. Scutellum and postscutellum flattened, but very slightly sloping, being still part of the dorsal surface of the thorax; the scutellum with a rather superficial, impressed, median line in its anterior half. Propodeum elongate, seen from above about as long as the scutellum, distinctly composed of a dorsal face which continues the gentle slope of the postscutellum, and a vertical, posterior aspect; quite gently rounded off on the transition between the two areas; seen from above the two halves of the propodeum are quite bulging posteriorly, being separated by a deep and broad groove, which continues dorsally to the postscutellum as a deep but narrow channel. Mesopleura without carinae along the epicnemial depressions for the fore and middle legs; these depressions quite strongly marked. Mesosternum unusually long and conspicuously flattened. Legs stout and short, as in *E. femoratus*; middle and hind tibiae with stiff, pale setae on the outer surface and a dense comb of pale spines at the outer apex. Middle tibiae with one spur. Claws with an inner tooth shortly before the apex. Wings short and wide, the venation showing the same peculiarities as in *E. femoratus*. First abdominal segment quite long and slender, much longer than the thorax, but distinctly shorter than head and thorax, about eight times as long as its greatest width seen from above; in profile but little and quite gently curved, uniformly thick throughout except at the extreme base; dorsally it is not appreciably flattened, except just before the apex, without trace of groove; it very gradually widens to the basal third, where the spiracles form low, lateral protuberances, so that the

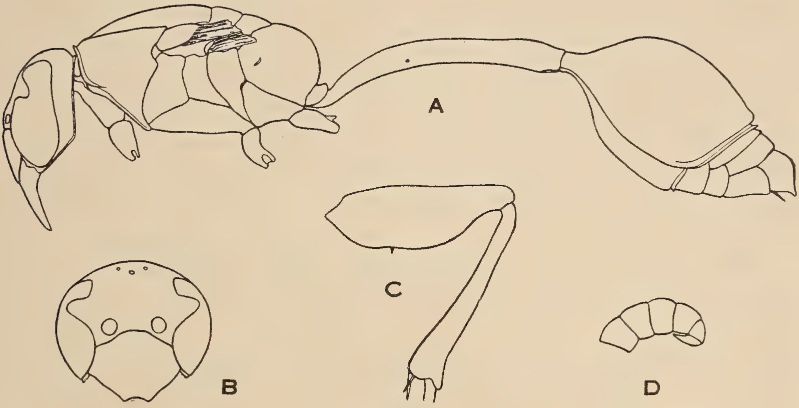

FIG. 2.—*Eumenes paeneplanus*, J. Bequaert. *A*, female in profile; *B*, anterior view of head of female; *C*, anterior view of hind femur and tibia of male; *D*, terminal segments of male antenna.

segment is here about as wide as at the apex; between the apex and the spiracles the sides are very gently and slightly curved inward. Second segment with a short, but distinct, basal neck, regularly campanulate, a little more convex dorsally than ventrally, much longer than high in profile, the swollen portion slightly longer than wide seen from above; not in the least compressed; the hind margin conspicuously duplicate, as in *E. femoratus*. The second sternite is distinctly depressed and somewhat concave in the middle over its basal third. Puncturation of the head as in *E. femoratus*, very deep and coarse on the clypeus; that of the thorax somewhat finer, the smooth intervals between the punctures being larger, so that the thorax is much more shiny; there is a smooth area along the apical margin of the postscutellum, quite conspicuous in the middle. First tergite with quite scattered and minute punctures, which are but little larger in the middle of the basal half. The puncturation of the second and succeeding segments as in *E. femoratus*. Pubescence as in *E. femoratus*.

Black, rather inconspicuously marked with ferruginous red (often shading into brown) as follows: clypeus, mandibles, basal half of antennae, a spot at the bottom of ocular sinus, the temples quite extensively, pronotum (except extreme lower edges), tegulae, the upper plate of mesopleura, scutellum (except anteriorly), postscutellum, propodeum (except for black margins and median line), legs (hind tibiae and middle and hind tarsi black, with ferruginous last tarsal segment), first abdominal segment (except for a dorsal, black band, much narrowed near the base), second segment broadly at base and narrowly at apex, the ferruginous colour spreading somewhat over the sides of the sternite. Apex of the first tergite with two triangular, ivory-white spots, confluent or separated in the middle; the hind tibiae with a narrow, ivory-white line along the outer surface; a narrow, ivory-white line along the anterior margin of the pronotum. Wings decidedly smoky, except in the posterior half of the hind wings; with purplish tinge, but without the golden reflections of *E. femoratus*. The two females seen, although from quite distant localities, are astonishingly alike in coloration.

Length (h.+th.+t. 1+2): 16 mm.

Male.—Clypeus more elongate than in the female, about as long as wide; the apical margin as deeply and broadly emarginate as in the female, but the edges much sharper. Vertex without fovea. Posterior ocelli nearly twice as far from the hind margin of the vertex as from the inner orbits and slightly farther from each other than from the eyes. Antennae quite short and thick, the flagellum conspicuously swollen; segments 5 and 6 almost square, 7 to 12 much wider than long; terminal hook shaped as in the male of *E. femoratus.* Legs short and conspicuously thickened as in *E. femoratus*; the hind femora somewhat less swollen, about three and one-half times as long as greatest width; in the basal half, where the femora bear the same heavy, short spine as in *E. femoratus*, the under side is obliquely depressed, but not grooved; the hind tibiae are but slightly curved. Claws deeply bifid before the apex. Clypeus ivory-white with a ferruginous median spot; an ivory-white line on the under side of the scape; pale spots on the under side of the antennal segments 9 to 11; the anterior margin of pronotum more distinctly ivory-white than in the female; apical ivory-white markings on the first tergite as in female; broad apical ivory-white bands on tergites 3 to 7 and on sternites 3 to 6, bisinuate anteriorly; the outer surface of all the tibiae and of the basal segment of the tarsi rather broadly ivory-white. The remainder as in the female.

Length (h.+th.+t. 1+2): 12·5 mm.

Rhodesia: Lonely, 1 ♀ (holotype), May 13, 1913 (H. Swale), S.A. Mus.

Transvaal: Barberton, 1 ♀ (paratype), November 11 (H. Edwards).

Natal: Mfongosi, 1 ♂ (allotype), March 1914 (W. E. Jones), S.A. Mus.

This species, though evidently allied to *E. femoratus*, is readily distinguished by the unusually depressed thorax. The flattening of the thorax has sometimes been regarded as a characteristic of *Pareumenes*, but the present species shows that this peculiarity is not of generic value among the Eumeninae.

Subgenus Eumenes proper.

Eumenes pomiformis (Rossi).

Vespa pomiformis, Rossi, Fauna Etrusca, 1790, p. 85.

Eumenes pomiformis, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 29 (♀♂); iii, 1856, p. 128.

Labus superbus, G. Meade Waldo, Ann. Mag. Nat. Hist., (8), v, 1910, p. 36 (♂).

This Palaearctic species is found in Egypt and Libya and enters the extreme north-eastern part of the Ethiopian region. It is here mainly included to publish the synonymy of *Labus superbus*, of which I have examined the type, from the White Nile, at the British Museum.

I am unable to distinguish it from *E. pomiformis*, and the identity of the two had apparently been recognised by the late Meade Waldo, since the specimen was placed with *E. pomiformis* in the collection.

It is generally supposed that *E. pomiformis* is but a variation of the common Palaearctic *E. coarctatus* (Linnaeus); but, with the limited material before me, it appears quite distinct. The puncturation of the second abdominal tergite and sternite is much more pronounced and denser than in *coarctatus*. It is, however, not the place here to discuss these two species further.

Eumenes braunsianus, A. v. Schulthess.

(Text-figure 3.)

Eumenes (*Eumenidion*) *braunsianus*, A. v. Schulthess, Societas Entomol., xxviii, 1913, p. 2 (♀♂). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 275.

Female.—Head seen in front distinctly broader than high. Clypeus slightly longer than wide, evenly convex in the basal two-thirds, gradually sloping anteriorly; the anterior, free portion a little shorter than the upper, interocular part; the anterior margin broadly truncate, with a distinct, though shallow emargination and obtusely rounded edges. Vertex without fovea. Posterior ocelli slightly farther from each other than from the eyes; the anterior ocellus distinctly larger. Front raised into a low carina between the antennae. Eyes bare, their inner margins slightly farther apart on the vertex than at the clypeus. Vertex and temples narrow, margined behind with a continuous, sharp rim. Mandibles elongate, slender, decussate, straight, with broad and obtuse, rather indistinct, teeth along the inner margin. Antennae elongate; the flagellum moderately and quite gradually swollen toward the apical half; segments—7 and 8 almost square, 9 to 11 wider than long, 12 about as long as wide at the base. Thorax subglobular, slightly longer than high in profile, more distinctly longer than wide seen from above. Pronotum straightly truncate anteriorly, the margin with a slightly raised carina which appears somewhat flattened and is much sharper on the sides, below the humeral angles; humeral angles prominent, but very obtusely rounded off. Mesonotum somewhat longer than wide, anteriorly with a slightly impressed, median line. Scutellum convexly swollen, transverse, with an impressed, median, longitudinal line anteriorly. Postscutellum very slightly convex. Propodeum very short, moderately and broadly grooved on the middle line behind the postscutellum, more deeply so above the insertion of the abdomen. Sides of propodeum moderately swollen, completely rounded off, without ridges or projecting angles. Mesopleura without carinae along the epicnemial depressions for the fore and middle legs. Legs normal. Venation of wings of the usual *Eumenes* type. First abdominal segment long and slender, slightly longer than the thorax, but shorter than head and thorax, about three and one-half times as long as its greatest width seen from above; in profile distinctly curved and much more swollen in its apical than in its basal half, the transition between the two portions being rather gradual; seen from above the apical half is nearly parallel-sided, distinctly flattened above, about two and one-half times as wide as the basal, stalk-like portion, the passage between the two being rather abrupt; the spiracles placed about midway the length of the segment and hardly projecting; dorsally there is a faint longitudinal groove toward the apex and a transverse, preapical depression. Second segment quite large, conspicuously swollen and nearly as long and high as the thorax in profile, bell-shaped and enclosing the greater part of the succeeding segments; in profile it is about as high as long and moderately compressed; basal neck extremely short; apical margin duplicate; the terminal lamella thin, membranous, smooth, separated by a deep groove from the preapical thickening. In the apical half the second tergite is raised along the middle line and

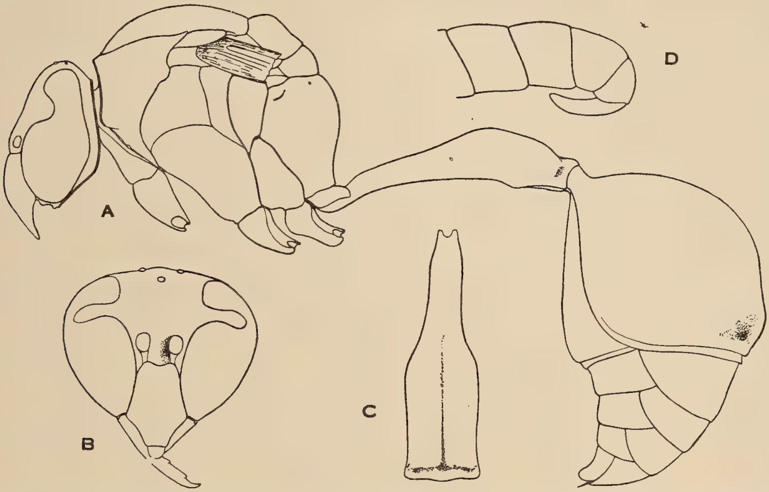

Fig. 3.—*Eumenes braunsianus*, A. v. Schulthess. *A*, female in profile; *B*, anterior view of head of male; *C*, first tergite of female from above; *D*, terminal segments of male antenna.

pinched shortly before the apex, due to the presence of a slight depression on each side of the median, raised portion. Puncturation quite dense and moderately coarse on head and thorax, including the propodeum ; epicnemial face of mesopleura, metapleura, and posterior half of tegulae nearly smooth and impunctate. Clypeus smooth and shiny, with very few, extremely minute and much scattered punctures in its basal half only. Groove of the propodeum rather coarsely rugose, somewhat obliquely wrinkled in its lower half. First tergite with scattered punctures, which are finer than on the thorax ; those of the second tergite still more minute, quite superficial on the sides and on the preapical swelling ; coarser and denser on the middle, before the apex. Pubescence long, erect, abundant, and greyish-white on head and thorax ; more silvery on sides of thorax, propodeum, and legs. Abdomen almost bare ; the second tergite with a brownish, somewhat golden bloom due to very short hairs.

Black, with abundant ferruginous red markings, as follows : mandibles ; labrum ; clypeus, except the extreme lateral margins ; a transverse spot between the antennae, not connected with the clypeus ; a narrow line along the upper half of the posterior orbits ; segments 1 to 8 of the antennae ; pronotum, except for the extreme lower angle above the legs, and a broad, black sinus before the base of the wing ; a transverse spot on the upper plate of the mesopleura ; tegulae and apex of post-tegulae ; anterior half of scutellum ; major part of postscutellum ; two large, triangular spots on propodeum, broadly separated medially ; the broader apical half of the first abdominal segment, except for a median dorsal band gradually widened anteriorly and not quite reaching the apex ; three large spots on second tergite ; two placed in the basal half, a short distance from the neck ; the third triangular, placed on the middle of the posterior half, and continuing on the sides along the apical margin to connect with the two basal spots (the second tergite is thus ferruginous with a black design in the shape of a reversed Y) ; apical half of second sternite and of third tergite, and remainder of abdomen ; legs, except for the coxae and the middle and hind trochanters. A narrow, pale yellow band covers the apical, swollen margin of the first tergite. Occasionally the clypeus, mandibles, and postscutellum, and perhaps some other parts, may be more orange-red than ferruginous. The posterior transverse ridges, connecting the sides of scutellum and postscutellum with the base of the wings, are pale coloured, more or less translucent. Wings but feebly smoky, with a slight horny-yellow tinge, darker toward the costa, faintly violaceous in the radial cell.

Length (h.+th.+t. 1+2) : 13·5 to 14·5 mm.

Male.—Clypeus relatively narrow, much longer than wide ; the anterior, free portion but little more than half the length of the interocular, upper part ; its apical margin broadly truncate, almost straight, with bluntly rounded edges. Head relatively higher than in the female ; the inner orbits nearly twice as far apart on the vertex as at the clypeus. Flagellum elongate, moderately thickened in the apical half ; antennal segments 8 to 12 slightly broader than long ; terminal hook moderately long, reaching about midway the tenth antennal segment when folded beneath the flagellum, straight and uniformly thick, gradually tapering at the obtuse apex. Legs normal. Second abdominal tergite somewhat more strongly pinched before the apex. Last (seventh) sternite uniformly convex and shiny, not in the least depressed, obtusely pointed at apex. Clypeus entirely pale yellow ; a small, yellowish spot above the clypeus and a minute yellow dot in the extreme lower corner of the inner orbits ; pronotum almost wholly ferruginous ; sternites 2 to 6 with pale yellow fasciae, quite wide on the fifth and sixth ; seventh sternite with a large, subcircular, pale yellow spot. The remainder as in the female.

Length (h.+th.+t. 1+2) : 13 mm.

E. braunsianus is the Ethiopian representative of a type of *Eumenes* more frequently found in the Nearctic region (*E. bollii*, Cresson, and *E. belfragei*, Cresson). In the strongly bell-shaped second tergite it approaches *E. peringeyanus*, from which it is readily separated by the much shorter and broader first abdominal segment.

Cape Province : Algoa Bay, 1 ♀, January 16, 1897 (holotype of the species) and 1 ♂, December 20, 1896 (H. Brauns) ; Maseru, Basutoland, 1 ♀ (Dicterlen), S. Afr. Mus.

A. v. Schulthess records it from Johannesburg, Transvaal. This is, however, not the type locality of the species, as I have stated by error in my catalogue of Ethiopian wasps. A. v. Schulthess designates the female from Algoa Bay, in Dr. Brauns' collection, as the type.

Eumenes peringeyanus, A. v. Schulthess.

(Text-figure 4.)

Eumenes (*Eumenidion*) *peringeyanus*, A. v. Schulthess, Societas Entomol., xxviii, 1913, p. 2 (♀). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 283.

Female.—Head seen in front slightly broader than high. Clypeus distinctly longer than wide, evenly convex in the middle ; the anterior, free portion much shorter than the interocular part; apical margin deeply, but broadly, arcuately emarginate, with triangular, flattened, bluntly rounded edges. Vertex without fovea. Ocelli in a much flattened triangle; posterior ocelli farther from each other than from the eyes; anterior ocellus distinctly larger. Front but slightly raised between the antennae, not in the least carinate. Eyes bare; their inner margins about one and one-half times as far apart on the vertex as at the clypeus. Vertex and temples narrow, margined behind with a continuous, sharp carina. Mandibles moderately elongate and slender, decussate, straight, with slightly curved apex and three distinct, but broad and obtuse, teeth along the inner margin. Antennae elongate; the flagellum much swollen in its apical half, where it is about twice as thick as at the base; segments—7 almost square, 8 to 11 much wider than long, 12 about as long as wide at the base. Thorax subglobular, slightly longer than high or wide, seen in profile or from above. Pronotum straightly truncate anteriorly, margined with an extremely fine carina, which is more prominent on the sides above the fore coxae. Humeral angles quite indistinct, very broadly rounded off. Mesonotum quite convex, about as long as wide, with a faint trace of anterior, median line. Scutellum moderately swollen, with an impressed, longitudinal line anteriorly. Postscutellum hardly convex. Propodeum very short, not grooved in the upper half, where it merely shows an impressed, longitudinal line; moderately and narrowly excavated in the lower half. Sides of propodeum hardly swollen, uniformly rounded off, without ridges or projecting angles. Mesopleura without carinae bordering the epicnemial depressions for the fore and middle legs. Legs normal, slender. Venation of the usual *Eumenes* type. First abdominal segment very long and slender, a little longer than head and thorax, four and one-half to five times as long as its greatest width seen from above; in profile evenly curved and quite gradually and moderately thickened from base to before apex; seen from above the segment widens quite gradually from base to middle, the apex being about twice the width of the base; dorsally it is not flattened and bears only a short, longitudinal groove just before the apex; spiracles placed about midway and but faintly projecting. Second segment quite large, conspicuously swollen dorsally and much compressed, bell-shaped; in profile it is as high as the thorax and about as high as long; seen from above it is about one and one-half times as long as wide, due to its compressed shape; basal neck short; apical margin duplicate; the terminal lamella long and thin, membranous, smooth, separated by a deep, foveolate groove from the preapical swelling ; the preapical thickening is preceded on the middle line by a transverse, shallow depression. Puncturation quite dense and moderately coarse on head and thorax, including the propodeum ; metapleura, epicnemial face of mesopleura, and tegulae smooth and nearly impunctate. Clypeus smooth and shiny, impunctate except in its upper half, where there are a few, scattered, fine punctures. First and second tergites fairly uniformly covered with medium-sized and moderately dense punctures, which are somewhat larger along the middle of the first tergite and become quite fine and scattering on the sides of the second. Pubescence long, erect, dense, greyish-white on head and thorax, somewhat silvery on clypeus, sides of thorax, propodeum, and legs ; short but dense on abdomen.

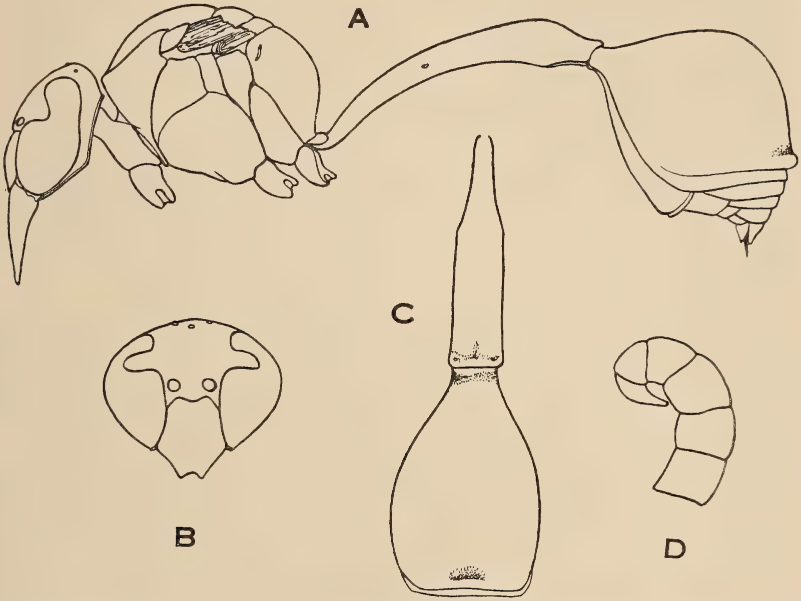

Fig. 4.—*Eumenes peringeyanus*, A. v. Schulthess. *A*, female in profile ; *B*, anterior view of head of female ; *C*, first and second tergites of female from above ; *D*, terminal segments of male antenna.

Black, abundantly marked with ferruginous and yellow as follows : clypeus yellow, more orange in the upper part, where it shades into ferruginous in the centre ; a yellow elongate mark between the antennae ; a yellow line along the outer orbits in the upper half of the temples ; mandibles and antennae ferruginous, the tip of the scape and the 7th to 12th segments above blackish brown ; pronotum ferruginous, broadly yellow along the anterior, and narrowly so along the posterior margin; tegulae ferruginous; a large, ferruginous spot on the mesopleura; scutellum yellow, margined with ferruginous; postscutellum yellow; two large yellow spots on propodeum, margined with ferruginous; legs ferruginous; the outside of the tibiae and the tip of the fore and middle femora externally yellow; first abdominal segment ferruginous on the sides and before the apex, the apical margin narrowly yellow and a faint, yellowish spot on each side in the apical third; second tergite with a black mark of the shape of a reversed Y: the preapical yellow margin widens in the middle into a triangle in which the transverse depression stands out as a brown spot; on each side of the tergite there is a broad triangular yellow spot; these yellow markings of the second tergite are all margined with ferruginous; remainder of the abdomen ferruginous, the second sternite blackish at base and with preapical yellow fascia; the other sternites faintly marked with yellow. Wings subhyaline, very slightly smoky, with violaceous tinge along the anterior margin and in the radial cell.

Length (h.+th.+t. 1+2): 12 to 13·5 mm.

Male (undescribed).—Clypeus much longer than wide, considerably narrowed in its upper part; the free, apical portion only half as long as the interocular part; its apical margin shaped as in the female. Inner orbits twice as far apart on the vertex as at the clypeus. Mandibles not appreciably notched along the inner margin. Flagellum conspicuously thickened in the apical half; the 8th to 12th antennal segments slightly wider than long; terminal hook short and thick, wedge-shaped in outline, slightly curved, gradually tapering to a sharp apex, which reaches midway the tenth antennal segment. Legs normal. Last (seventh) sternite slightly convex and smooth in the centre, somewhat depressed and deeply punctate before the slightly thickened margin, very broadly rounded off at apex. Clypeus entirely yellow; most of the other yellow markings of the female are ferruginous, but the apical fasciae of the first and second tergites are yellow and the succeeding tergites are also more or less marked with yellow. The remainder as in the female.

Length (h.+th.+t. 1+2): 11 mm.

The coloration is evidently variable. The above description is based on a pair taken by Dr. H. Brauns at Willowmore. In the type, and two other specimens at the South African Museum, the yellow has replaced most of the ferruginous red colour, especially on the thorax. Structurally, however, all these specimens are alike.

Cape Province: Prieska, 3 ♀, one being the type, S. Afr. Mus.;

Willowmore, 1 ♀, December 1, 1920, and 1 ♂ (allotype), October 20, 1919 (H. Brauns).

A. v. Schulthess records it also from Deelfontein, Cape Province. He evidently overlooked the locality of the type specimen, which is on the label in Péringuey's handwriting; the two other specimens of the South African Museum, part of the original lot, bear the letter P, presumably an abbreviation of Prieska.

Eumenes füllebornianus, A. v. Schulthess.

Eumenes füllebornianus, A. v. Schulthess, Societas Entomol., xxv, 1910, p. 18 (♀♂). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 276.

Southern Rhodesia: Victoria Falls, 1 ♀, March 1, 1920, Rhodesia Museum.

Portuguese East Africa: Amatongas Forest, 1 ♀ and 1 ♂, February 1917, Rhodesia Museum.

The morphological peculiarities are described and figured for *E. langi*, in which I now recognise a colour race of *E. füllebornianus*. The typical form, of East Africa, is black, more or less extensively ferruginous on pronotum, mesopleura, sides of propodeum, under side of abdomen (especially on the first segment), legs, mandibles, and under side of antennae. In the three specimens examined the only pale yellow markings are a short line along the outer orbits in the upper part of the temples, a faint indication of posterior margin of pronotum in the centre, and a broadly interrupted apical band on the first tergite. The clypeus of the male is black, with somewhat ferruginous apical edges.

This is the smallest of the Ethiopian *Eumenes* and should be readily recognised by the coarsely sculptured, almost foveolate second tergite, as well as by the peculiar shape of the first abdominal segment.

The species was originally described from Zanzibar and Lake Nyasa.

Eumenes füllebornianus var. *langi*, J. Bequaert.

Eumenes langi, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 56, 85 (♀; figs. 71–73), and 276.

This is evidently the West African form of *E. füllebornianus*, from which it differs merely in the almost total absence of ferruginous markings. It was described on a unique female from Boma, Belgian

Congo, which had many, irregular, transverse wrinkles on the posterior half of the second tergite. Three additional specimens from the Belgian Congo do not possess these wrinkles, but instead the second tergite is coarsely punctate as in the East African *E. füllebornianus*. Since I am unable to find other differences, I must regard the wrinkling in the type specimen as abnormal and due to some injury during the pupal stage.

A female of the var. *langi* in the Congo Museum, at Tervueren, Belgium, was obtained in the Manyema by R. Mayné. It is still more black than the type; the under side of the three last antennal segments, the mandibles and fore tibiae are slightly ferruginous; the apex of the fore tibiae is spotted with pale yellowish on the outer side; the only pale yellow markings of the abdomen are a small apical spot on each side of the first tergite; the pronotum bears a narrow whitish line medially, along the hind margin. This specimen reaches 11 mm. (h.+th.+t. 1+2).

Male of var. *langi* (undescribed).—Head relatively higher than in the female. Clypeus more elongate, considerably narrowed above, about twice as long as wide; the apical margin quite shallowly sinuate; the free, apical portion only half as long as the interocular part. Inner orbits twice as far apart on the vertex as at the clypeus. Flagellum moderately and quite gradually swollen; antennal segments 9 to 12 slightly wider than long; the hook-like segment rather small, wedge-shaped, much narrowed into a very long, narrow, and sharp apex, which reaches the base of the eleventh antennal segment. Legs normal. Seventh sternite uniformly convex and shiny. The remainder as in the female; the coloration also similar. In one specimen the clypeus is entirely black, densely covered with silvery pile; a small, whitish dot above the base of antennae; a short, whitish line along outer orbits in upper part of temples; the posterior margin of pronotum narrowly whitish in the middle; whitish outer edges of the apex of first tergite; a narrow, whitish line on each side on the preapical swelling of second tergite; and a whitish streak on the outer side of the fore tibiae. The other male has only the white dot above the base of the antennae and white line of the outer orbits, being otherwise completely black.

Length (h.+th.+t. 1+2): 7·5 to 8 mm.

The two male specimens on which the foregoing description is based were collected by Maurice Bequaert, at Coquilhatville, Belgian Congo, October 15, 1922.

Eumenes oculihirtus, new species.

(Text-figure 5.)

Female.—Head seen in front much broader than high. Clypeus slightly longer than wide, elongate hexagonal, quite evenly convex toward the centre; the anterior, free portion but two-thirds the length of the upper, interocular part; the apical margin nearly half the total width of the clypeus, with a moderately deep, broadly open, arcuate emargination and extremely obtuse, broad edges. Vertex without fovea. Ocelli placed in a flattened triangle; posterior ocelli slightly farther apart than from the inner orbits; the anterior ocellus considerably larger. Front very slightly raised but not carinate between the antennae. Eyes densely covered all over with long, erect, greyish-white pubescence, quite apparent under a magnification of 10 diameters; the inner orbits much farther apart on the vertex than at the clypeus. Vertex and temples narrow, margined behind with a continuous, sharp rim. Mandibles elongate, slender, decussate, straight; with a curved, sharp apex and three broad, oblique, obtuse but quite strong teeth along the inner margin. Antennae moderately elongate; the flagellum conspicuously swollen in its apical half; segments—8 almost square, 9 to 11 wider than long, 12 about as long as wide at base. Thorax subglobular, about one-sixth longer than high seen in profile, and but little longer than wide seen from above. Pronotum not quite straightly truncate anteriorly; the margin completely rounded off and smooth in the middle; on the sides (dorsally) with an extremely fine, raised line, which is not visible with a hand lens of 10 diameters; below the humeral angles there is a more distinct, but flattened and blunt, vertical carina, which is deeply sinuate about the middle of its length. Humeral angles hardly defined, very obtusely rounded off. Mesonotum somewhat longer than wide, with a smooth but rather dull line in the middle of its anterior half. Scutellum quite uniformly swollen, the anterior, horizontal half gradually rounded off into the posterior, sloping portion; with a median, smooth, slightly raised, longitudinal line. Postscutellum hardly convex and entirely within the posterior, vertical slope of the thorax; divided by a fine, median, longitudinal furrow. Propodeum extremely short seen from above, but little convex, completely rounded off, without ridges or projecting angles; the median groove reduced to a very fine, impressed line in the upper half; moderately deep and quite wide in the lower portion. Mesopleura without carinae or ridges along the epicnemial depressions for the fore and middle legs. Legs normal, slender. Venation of wings of the usual *Eumenes* type. First abdominal segment quite long and slender, but little shorter than head and thorax, about five times as long as its greatest width seen from above; in profile distinctly but quite gently curved, slightly and quite gradually swollen toward the apical half; seen from above the tergite widens very gradually from the base to just before the middle, where the spiracles are slightly protuberant; thence the increase is quite slow to the apex, which is the widest part of the tergite; dorsally the segment is not appreciably flattened, but its apical half bears a longitudinal, shallow groove, which becomes more distinct posteriorly. Second segment quite large, bell-shaped, conspicuously more swollen dorsally than ventrally, but not in the least compressed; but slightly longer than high in profile; basal neck short, but distinct; apex or sternite and tergite duplicate; the terminal lamella quite thin, translucent, flat, separated from the preapical swelling by a minutely foveolate, deep furrow; second sternite flat at base. Head and thorax dull, rather sparsely covered with scattered punctures of medium size; they are somewhat coarser on scutellum, postscutellum, and posterior part of propodeum; clypeus impunctate, dull. First abdominal tergite with very few, minute punctures, almost impunctate; second tergite fairly uniformly covered with moderately dense punctures, similar to those of the mesonotum; they are quite sparse and minute on the second sternite; the remainder of the abdomen impunctate. Pubescence quite long and dense on head, thorax, and abdomen, giving to the insect a dull, greyish appearance; there is also an admixture of shorter, somewhat silvery tomentum, especially striking on the clypeus.

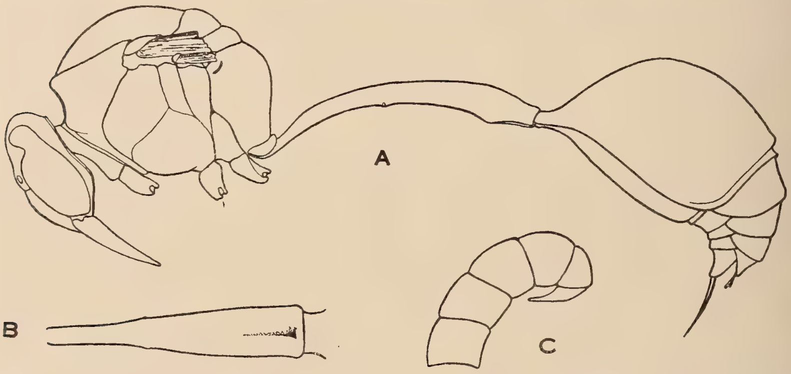

Fig. 5.—*Eumenes oculihirtus*, J. Bequaert. *A*, female in profile; *B*, first tergite of female from above; *C*, terminal segments of male antenna.

Black, with scant and dull ferruginous markings as follows: clypeus (except for a large, median, black spot in the upper half), mandibles, scape (except for a black line on the upper side) and under side of flagellum, pronotum (except for a large black spot on each side), margins of tegulae, posterior two-thirds of scutellum, the sides of propodeum quite broadly, the legs (except for the black middle and hind tarsi), the under side of the first abdominal segment, the extreme sides of the second tergite, and most of fourth to sixth segments. Ivory-white markings are reduced to a narrow, transverse fascia a short distance before the apex of the postscutellum; narrow, almost linear, apical fasciae on the first tergite and on the second tergite and sternite; a preapical, median streak on the third tergite; a line along the outer orbits in the upper part of the temples; and a line on the upper (outer) surface of middle and hind tibiae. Wings subhyaline, smoky and purplish before the stigma and in the radial cell.

Length (h.+th.+t. 1+2): 13 to 14 mm.

Male.—Clypeus much longer than wide; the anterior, free portion only half as long as the interocular part; the apical margin emarginate as in the female. Inner orbits twice as far apart on the vertex as at the clypeus. Flagellum rather conspicuously swollen in the apical half, where the segments are slightly beaded; antennal segments, 8 almost square and 9 to 12 wider than long; terminal hook long and slender, slightly curved, narrowed from the very base to a long and very sharp point, which reaches about midway the tenth antennal segment. Legs somewhat shorter than in the female, but otherwise normal. Last sternite normally convex, impunctate. The remainder as in the female. The coloration is almost exactly that of the female; but the clypeus is entirely ferruginous in the allotype and ivory-white with a large ferruginous spot in the paratype; the ferruginous sides of the second tergite are angularly produced toward the middle; and there are also ivory-white, sinuate fasciae on tergites and sternites 3 and 4.

Length (h.+th.+t. 1+2): 12 to 13 mm.

Rhodesia: Bulawayo, 1 ♀ (paratype), April 23, 1912 (G. Arnold), Rhodesia Mus.

Natal: Mfongosi, 1 ♀ (holotype) and 2 ♂ (allotype and paratype), March and April 1916 (W. E. Jones), S.A. Mus.

E. oculihirtus differs from all other Ethiopian *Eumenes* in the densely pubescent eyes. This appears to be a most unusual peculiarity among the Eumeninae, where I know personally of no other case. Brèthes, however, states that a few Argentinian *Eumenes* of the subgenus

Omicron (such as *E. spegazzinii*, Brèthes, *E. argentinus* (Berg), and others) have traces of villosity on the eyes, visible only with the proper magnification (An. Mus. Nac. Buenos Aires, (3), vi, 1906, p. 312). In the species here described, the pile of the eyes is quite long and abundant.

The nearest ally appears to be *E. lucasius*, which, however, is quite distinct in the bare eyes, the much broader clypeus of the female, the broader and relatively shorter first tergite, and the coarse and dense puncturation of head, thorax, and first tergite.

Eumenes lucasius, H. de Saussure.

(Text-figure 6.)

Eumenes lucasia, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 68 (♂).
Eumenes lucasius, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 278 (♀♂).
Rethus broomi, P. Cameron, Rec. Albany Mus., i, 2, 1904, p. 110 (♂).
Eumenes schultzeanus, A. v. Schulthess, Societas Entom., xxv, 1910, p. 19 (♀♂).

Female.—Head seen in front slightly broader than high. Clypeus about as long as wide, almost hexagonal in outline, quite evenly convex toward the centre; the anterior, free portion about two-thirds the length of the upper, interocular part; the apical margin nearly half the total width of the clypeus, with a distinct, broadly arcuate emargination and blunt, triangular edges. Vertex with fovea. Ocelli placed in a flattened triangle; posterior ocelli a little farther apart than from the inner orbits; anterior ocellus much larger. Front slightly raised and bluntly carinate between the antennae. Eyes bare, much farther apart on the vertex than at the clypeus. Vertex and temples narrow, margined behind with a continuous, sharp rim. Mandibles elongate, slender, decussate, straight, with a curved, sharp apex and three broad, obtuse, oblique teeth along the inner margin. Antennae moderately elongate; the flagellum gradually swollen in its apical half; antennal segments—6 nearly square, 7 to 11 wider than long, 12 about as broad as long. Thorax short oval, about one-fifth longer than high seen in profile, and distinctly longer than wide seen from above. Pronotum squarely truncate anteriorly; its anterior margin rounded off and almost blunt, with a mere trace of raised line toward the sides (dorsally); below the humeral angles there is a blunt, vertical carina, deeply sinuate about midway. Humeral angles but poorly defined and broadly rounded off. Mesonotum slightly longer than wide, with a fine, longitudinal, impressed line over the anterior two-thirds. Scutellum quite uniformly swollen and almost entirely comprised in the dorsal face of the thorax; with a median, longitudinal line, which is slightly raised in the anterior half. Postscutellum hardly convex and entirely within the posterior slope of the thorax, without any trace of median line. Propodeum short seen from above, moderately convex, completely rounded off, without ridges or projecting angles; the median groove broad and shallow, deeper above the insertion of the abdomen, effaced behind the postscutellum. Mesopleura without carinae or ridges along the epicnemial depressions for the fore and middle legs. Legs normal, slender. Venation of wings of the usual *Eumenes* type. First abdominal segment long and slender, about as long as the thorax in profile, about four times as long as its greatest width seen from above; in profile distinctly, but quite gently curved, slightly and quite gradually swollen toward the apical half; seen from above the tergite widens quite gradually from the base to near the middle, where the spiracles are slightly protuberant; the posterior half is nearly parallel-sided, though the segment is slightly wider at the apex; the dorsal surface is distinctly flattened, especially in the posterior half, which bears a shallow, longitudinal groove, increasing in depth to before the apex. Second segment bell-shaped, but moderately swollen, not much more convex dorsally than ventrally, very slightly compressed; about as high as long in profile, distinctly longer than wide seen from above; basal neck well developed, relatively longer and narrower than in

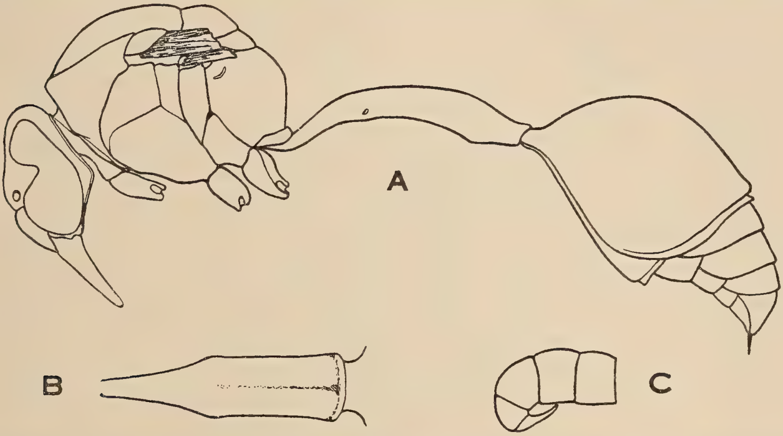

Fig. 6.—*Eumenes lucasius*, H. de Saussure. *A*, female in profile; *B*, first tergite of female from above; *C*, terminal segments of male antenna.

E. acuminatus; apex of sternite and tergite distinctly duplicate; the terminal lamella thin and long, translucent, flat, separated from the preapical swelling by a minutely foveolate, deep furrow; second sternite flat at base. Puncturation quite coarse and dense on head and thorax, almost reticulate on the propodeum, where the median groove shows a series of transverse ribs in its lower half; clypeus dull, with a few widely scattered, rather large punctures. First abdominal tergite in its posterior two-thirds with many medium-sized punctures, more remote on the sides, quite dense on the median groove. Second tergite fairly uniformly covered with sparse punctures, which are decidedly smaller than those of the first; on the second sternite the punctures are larger, but much more scattered; the remainder of the abdomen impunctate. Pubescence quite long and dense, greyish-white on head and thorax; very short and sparse on abdomen.

Black, with few dull ferruginous markings as follows: clypeus, mandibles (except for the black base), under side of antennae, pronotum (except for a large black spot in the hind corners), tegulae, post-tegulae, a spot on the upper plate of the mesopleura, the major part of the scutellum, the sides of the propodeum quite extensively, the sides of the first and second abdominal segments (the ferruginous extending somewhat angularly toward the middle of the second tergite), the larger part of the succeeding segments, and the greater part of the legs (middle and hind tarsi blackish-brown). The ivory-white markings are a short line along the outer orbits in the upper part of the temples, a narrow fascia along the entire posterior margin of the pronotum, a transverse fascia over the postscutellum, a narrow apical fascia on the first tergite and on the second sternite, and a much broader one on the second tergite. Wings slightly smoky, more so along the anterior margin and in the radial cell, which is somewhat purplish.

Length (h.+th.+t. 1+2): 11 to 12 mm.

Male.—Clypeus about one and one-half times as long as wide; the anterior, free portion about two-thirds the length of the basal, interocular part; the apical margin emarginate as in the female. Inner orbits twice as far apart on the vertex as at the clypeus. Flagellum rather uniformly swollen in the apical two-thirds; antennal segments—7 nearly square, and 8 to 12 wider than long; terminal hook moderately long and very slender, almost straight, narrowed from the very base to a long and very sharp point, which reaches about midway the tenth antennal segment. Last sternite normally convex, impunctate, except on the sides before the apex. The remainder as in the female. The coloration is also quite similar, but the clypeus is entirely ivory-white ; sometimes the posterior margin of the pronotum is ivory-white in the middle only.

Length (h.+th.+t. 1+2) : 9 to 11 mm.

This is the most common and most widely distributed of the Ethiopian species of *Eumenes* proper. It is, however, strictly East and South African, being known from Abyssinia to Cape Town.

Katanga : Lubumbashi, 7 ♂, May and June 1920 (Mich. Bequaert).

Southern Rhodesia : Salisbury, 1 ♂, June 20, 1919 (G. Arnold), Rhodesia Mus.

Portuguese East Africa : Mt. Morumbula, 1 ♂, October 29, 1908 (C. W. Howard).

Natal : Krantzkloof, 1 ♀, April 1917, and 1 ♂, March 1915 (Marley), S.A. Mus.

Cape Province : Dunbrody, 1 ♂ (O'Neil), S.A. Mus. ; Algoa Bay, 1 ♀, March 1, 1897, and George, 1 ♂, January 20, 1920 (H. Brauns) ; Cape Town, 1 ♂, April 4, 1920 (Mich. Bequaert).

E. lucasius was originally described from Abyssinia. The synonymy of *E. schultzeanus* was recognised by A. v. Schulthess himself (Societas Entomol., xxv, 1910, p. 24) ; that of *Rethus broomi* by Cameron (Ann. Transvaal Mus., ii, 3, 1910, p. 156) and by Meade Waldo (Ann. Mag. Nat. Hist., (8), xiv, 1914, p. 404). Cameron has also synonymysed with it *Zethus favillaceus*, Walker (List of Hymenoptera collected by J. K. Lord in Egypt, 1871, p. 28), of Tajura, on the African shore of the Gulf of Aden. Whether he was correct is impossible to decide from the description alone, and it is not likely that Cameron saw Walker's type.

Eumenes arnoldi, new species.

(Text-figure 7.)

Female.—Head seen in front slightly broader than high. Clypeus slightly longer than wide, elongate hexagonal, quite gently convex over the entire surface ; the anterior, free portion about two-thirds the length of the upper, interocular part ; the apical margin about half the total width of the clypeus, rather shallowly and quite broadly arcuately emarginate, with blunt, triangular edges. Vertex without fovea. Ocelli placed in a flattened triangle ; posterior ocelli about as far apart as from the inner orbits ; anterior ocellus larger. Front slightly raised and bluntly carinate between the antennae. Eyes bare, much farther apart on the vertex than at the clypeus. Vertex and temples narrow, margined behind with a continuous, sharp rim. Mandibles elongate, wider than usual, decussate, straight ; the apex but little curved and rather obtuse; with three blunt, broad teeth along the inner margin. Antennae moderately elongate; the flagellum gradually swollen to its apical third; antennal segments—5 distinctly and 6 slightly longer than wide, 7 almost square, 8 to 11 wider than long, 12 slightly longer than wide at base. Thorax short oval, about one-fourth longer than high in profile and distinctly longer than wide seen from above. Pronotum not quite squarely truncate; the anterior margin rimmed throughout with a very fine raised line; below the humeral angles it becomes a strong but flattened carina, deeply sinuate about midway. Humeral angles inconspicuous and broadly rounded off, the dorsal aspect of the pronotum being narrow and elongate as compared with *E. acuminatus.* Mesonotum about as broad as wide, with a median, impressed, longitudinal line over its anterior half. Scutellum rather strongly, but uniformly convex; the anterior half, which is in the dorsal face of the thorax, gradually curved into the posterior, sloping part; divided by a fine longitudinal, median line, which is not appreciably raised anteriorly. Postscutellum almost flat, entirely within the posterior slope of the thorax, without any trace of median line. Propodeum quite short seen from above, moderately convex, completely rounded off, without ridges or projecting angles; the median groove broad and shallow, a little

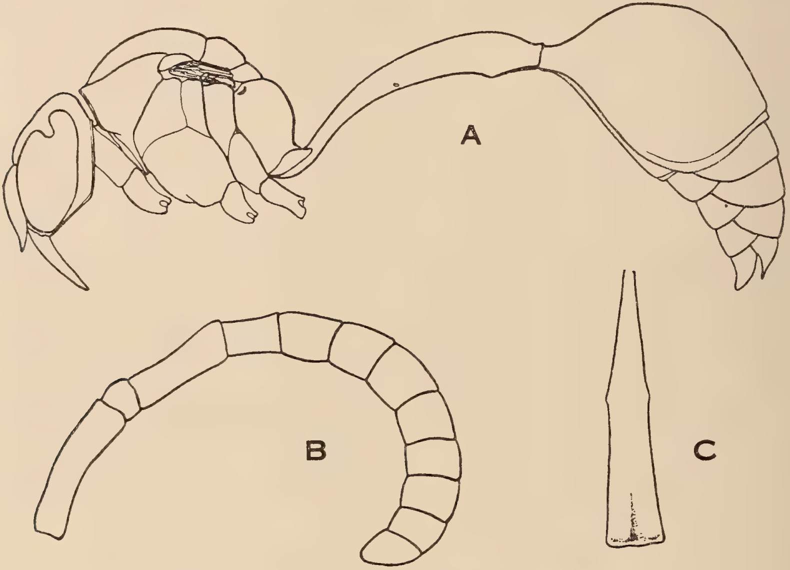

Fig. 7.—*Eumenes arnoldi,* J. Bequaert. *A,* female in profile; *B,* antenna of female; *C,* first tergite of female from above.

deeper above the base of the abdomen, entirely effaced behind the postscutellum. Mesopleura without carinae or ridges along the epicnemial depressions for the fore and middle legs. Legs normal, slender. Venation of wings of the usual *Eumenes* type; the third cubital cell is relatively shorter and higher than in *E. acuminatus*, being much shorter on the cubital vein than the second. First abdominal segment quite long and slender, much more slender than in *E. acuminatus* and even more so than in *E. lucasius*, about as long as head and thorax together in profile; slightly over five times as long as its greatest width seen from above; in profile distinctly but gently curved and quite gradually swollen toward the apical third; seen from above the tergite widens quite gradually from base to apex, which is the widest part; about midway the spiracles are rather conspicuously protuberant; dorsally it is but slightly flattened and very superficially grooved, except toward the apex, where it is deeply furrowed. Second segment bell-shaped and rather strongly swollen, much more convex dorsally than ventrally, very slightly compressed; about as high as long in profile, distinctly longer than wide seen from above; basal neck well developed, relatively longer and narrower than in *E. acuminatus*; apex of sternite and tergite distinctly duplicate; the terminal lamella thin, translucent, flat, separated from the preapical swelling by a minutely foveolate, deep furrow; second sternite flat at base. Puncturation moderately coarse and dense on head and thorax; on the dorsum the punctures are somewhat finer than in *E. acuminatus*, the difference being especially marked on the pronotum; the propodeum and mesopleura, however, are not in the least subreticulate as in that species; on the mesopleura the punctures are small and remote; the base of the postscutellum is covered with a series of fine rugosities, placed more or less longitudinally; tegulae with very few, irregular punctures; clypeus dull, almost impunctate, with very few, scattered, and superficial punctures. First abdominal tergite medially with sparse and rather minute punctures. Second tergite with quite minute punctures, scattered fairly uniformly over the whole surface; those of the sternite larger, but very sparse. The remainder of the abdomen impunctate. Pubescence short and sparse, except on the head.

Black, abundantly marked with ferruginous red as follows: clypeus, mandibles, antennae (somewhat brownish on upper side), pronotum, tegulae, post-tegulae, extensive patches on mesopleura, scutellum, propodeum (except behind the postscutellum and medially), first abdominal segment (except for a median, black line dorsally, which is wider in the basal half and broadens again before the apex), second segment (except for a wide, black, dorsal mark in the basal half, forming an inverted T), the remainder of the abdomen, and the legs (middle and hind tarsi brownish). The few ivory-white markings are much as in *E. lucasius* and *E. acuminatus*: a small spot between the base of the antennae, a short line along the outer orbits in the upper part of the temples, a narrow fascia along the posterior margin of the pronotum, a transverse fascia over the postscutellum, a narrow apical fascia on the first tergite and second sternite, a much broader one on the second tergite, apices of fore coxae and of fore and middle femora, and the outer surface of all tibiae. Wings subhyaline, but slightly smoky anteriorly and in the radial cell, which is faintly purplish.

Length (h.+th.+t. 1+2): 12 mm.

Male unknown.

Natal: Mfongosi, 2 ♀ (holotype and paratype), March and December 1914 (W. E. Jones), S.A. Mus.

This species is closely allied to both *E. lucasius* and *E. acuminatus*, and from published descriptions it would be quite impossible to differentiate it. From both species it differs conspicuously in the shape of the first abdominal segment, which is quite slender and evenly widened from base to apex. The thorax is more slender and narrower, seen from above, than in *E. acuminatus*, from which it differs also in the finer sculpture of the mesopleura and the less thickened antennae; the slight difference in the venation is perhaps not reliable. From *E. lucasius* it differs also in the pronotum being more distinctly rimmed along the anterior margin, and in the puncturation, which is sparser and much finer on the first and second tergites. In general aspect *E. arnoldi* is not unlike *E. oculihirtus*, but it has bare eyes and lacks the conspicuous pubescence of the body.

Named for Dr. G. Arnold, Curator of the Rhodesia Museum and distinguished student of the Hymenoptera.

Eumenes acuminatus, H. de Saussure.

(Text-figure 8.)

Eumenes (*Zeta*) *acuminatus*, H. de Saussure, Et. Fam. Vesp., iii, 1856, p. 147, pl. viii, fig. 2 (♂).

Eumenes acuminatus, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 274.

Female.—Head seen in front distinctly broader than high. Clypeus a little longer than wide, elongate hexagonal, quite gently convex over the whole surface; the anterior, free portion but little shorter than the upper, interocular part; the apical margin about half the total width of the clypeus, rather deeply, but quite broadly, arcuately emarginate, with blunt, triangular edges. Vertex without fovea. Ocelli placed in a flattened triangle; the posterior ocelli about as far apart as from the inner orbits; anterior ocellus larger. Front slightly raised and bluntly carinate between the antennae. Eyes bare, much farther apart on the vertex than at the clypeus. Vertex and temples narrow, margined behind with a continuous, sharp rim. Mandibles moderately elongate and rather wide, decussate, straight; the apex but little curved and rather obtuse; with three blunt, broad teeth along the inner margin. Antennae rather short; the flagellum fairly uniformly thickened over most of the length; antennal segments—5 slightly longer than wide, 6 square, 7 to 11 broader than long, 12 about as long as wide at base. Thorax short, oval and somewhat depressed, about one-fourth longer than high in profile, and but little longer than wide seen from above, being conspicuously wider than in *E. arnoldi.* Pronotum nearly squarely truncate; the anterior margin rimmed throughout with a very fine, raised line; below the humeral angles it becomes a strong but flattened carina, deeply sinuate about midway. Humeral angles quite distinct, but bluntly rounded off, the dorsal aspect of the pronotum being relatively wide. Mesonotum but slightly longer than wide, with a faint trace of median, impressed line in the anterior half. Scutellum moderately and uniformly convex, very gently sloping posteriorly; divided by a fine, longitudinal, median line, which is slightly raised in the anterior half. Postscutellum almost flat, entirely within the posterior slope of the thorax, without any trace of median line. Propodeum quite short seen from above, moderately convex, completely rounded off, without ridges or projecting angles; the median groove broad and shallow, a little deeper above the base of the abdomen, almost reduced to a fine, impressed line in the upper half. Mesopleura without carinae or ridges along the epicnemial depressions for the fore and middle legs. Legs normal, slender. Venation of wings of the usual *Eumenes* type; third cubital cell relatively long, being not or but little shorter on the cubital vein than the second; first abscissa of radial vein (on first cubital cell) about twice as long as the second (on second cubital cell); the third abscissa convex into the radial cell and about as long as the two preceding abscissae together; the third cubital cell but little higher than long on the radial vein. First abdominal segment long, but moderately slender, much less so than in *E. arnoldi* and even less than in *E. lucasius* ; about as long as the thorax in profile ; not quite four times as long as its greatest width seen from above ; in profile distinctly but gently curved and much more swollen than in *E. lucasius* and *E. arnoldi,* being thicker in the middle than at the apex ; seen from above the basal third forms a narrow stalk, which widens rather rapidly to midway, where the spiracles are hardly protuberant ; the apical half is fairly parallel-sided, nearly three times as wide as the base, flattened dorsally and with a distinct, though shallow, longitudinal groove ; there is a distinct, transverse depression before the slightly thickened apex. Second segment bell-shaped and rather strongly swollen, much more convex dorsally than ventrally, not appreciably compressed, slightly longer than high in profile and longer than wide seen from above ; basal neck quite short and but little narrower than the apex of the first tergite ; apex of sternite and tergite distinctly duplicate ; the terminal lamella thin, translucent, flat, separated from the preapical swelling by a minutely foveolate, deep furrow ; second sternite flat at base. Puncturation quite coarse and dense on head and thorax ; the propodeum and especially the mesopleura subreticulate ; tegulae almost impunctate ; clypeus dull, its basal half with scattered, rather large punctures, which are especially conspicuous in the middle. First abdominal tergite fairly

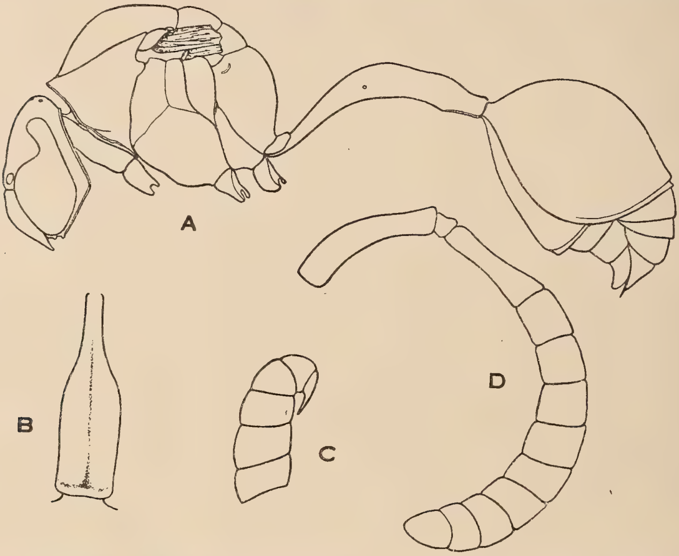

FIG. 8.—*Eumenes acuminatus,* H. de Saussure. *A,* female in profile ; *B,* first tergite of female from above ; *C,* terminal segments of male antenna ; *D,* antenna of female.

uniformly covered with scattering, minute punctures, with a few larger ones near the middle line. Second tergite with very minute punctures, scattered all over and becoming rather indistinct toward the preapical swelling; those of the sternite very sparse and quite small. The remainder of the abdomen impunctate. Greyish-white pubescence long, erect, and dense on head and thorax; very short and sparse on abdomen; the clypeus somewhat silvery; the whole body dull, due to a brownish tomentum, especially distinct on the second tergite.

Black, abundantly marked with ferruginous as follows: clypeus (except for a median black spot near the base), mandibles (black at extreme base), antennae (brownish-black on the upper side), pronotum (except for a black spot in the posterior half), tegulae, post-tegulae, a large spot on the upper plate of the mesopleura, scutellum (except for the margins and a black median line), major part of propodeum (except the broad anterior and lateral margins and middle line), first abdominal segment ventrally and on the sides of its apical half, sides of second tergite forming broad triangular spots a short distance from the base, blotches in the apical half of the second sternite, remainder of abdomen, and legs (except for the brownish-black basal two-thirds of hind femora; the coxae somewhat brownish). The ivory-white markings are almost exactly as in *E. arnoldi*: a small, transverse spot between the base of the antennae, a short line along the outer orbits in the upper part of the temples, a line along the posterior margin of the pronotum (rather indistinct toward the base of the wings), a transverse fascia over the postscutellum, a narrow apical fascia on the first tergite and second sternite, a much broader one on the second tergite (somewhat emarginate in the middle), the extreme apex of the fore coxae, a spot near the apex of the middle tibiae, and a line on the outer surface of all the tibiae. Wings subhyaline, slightly smoky and somewhat purplish along the anterior margin and in the subcostal and radial cells.

Length (h.+th.+t. 1+2): 12 mm.

Male.—Clypeus about one and one-half times as long as wide; the anterior, free portion about two-thirds the length of the basal, interocular part; the apical margin somewhat less emarginate than in the female. Inner orbits twice as far apart on the vertex as at the clypeus. Flagellum very gradually swollen toward the apical half; antennal segments—5 and 6 slightly longer than wide, 7 nearly square, 8 to 12 wider than long; terminal hook as in *E. lucasius*, very slender, almost straight, narrowed from the very base to a long and very sharp point, which reaches to near the base of the tenth antennal segment. Last sternite normally convex, impunctate, except on the sides before the apex. Clypeus impunctate. The remainder as in the female. Coloration similar, but the clypeus entirely ivory-white; apical, ivory-white fasciae also on tergites 3 and 4 and on sternites 3 to 6; all tibiae with a broader, ivory-white line on the outer surface. In the one specimen seen the ivory-white line is lacking along the posterior margin of the pronotum; also the third cubital cell is much longer than the second, but this is evidently due to an abnormal shortening of the second cell, as the second recurrent vein ends just beyond the second transverse cubital in the extreme corner of the third cubital cell (in the female described above the second recurrent ends normally in the second cubital cell considerably before the second transverse cubital).

Length (h.+th.+t. 1+2): 10·5 mm.

Transvaal: Lichtenburg, 1 ♂, January 1, 1906 (H. Brauns).

Natal: Frere, 1 ♀, 1893 (G. Marshall), S.A. Mus.

The two specimens on which the above description is based were identified as *E. acuminatus* by Dr. A. v. Schulthess. The male agrees with de Saussure's very brief description and figure; the author mentions expressly that the thorax is quite broad at the pronotum, which is one of the main differences of this species with *E. arnoldi* and *E. lucasius.* No complete description of the species has ever been given.

Gribodo (Ann. Mus. Civ. Genova, xxi, 1864, p. 296) described from Abyssinia (Let Marefia, Scioa) the supposed female of *acuminatus.* His description, however, could apply equally well to that species, to *E. arnoldi,* and to *E. lucasius.* According to A. v. Schulthess (Societas Entomol., xxv, 1910, p. 24), Gribodo's *acuminatus* is specifically distinct from de Saussure's species, but the differences were not stated.

H. de Saussure's type (♂), from the "Cape of Good Hope," should be at the Stockholm Museum.

Eumenes capensis, A. v. Schulthess.

Eumenes capensis, A. v. Schulthess, Societas Entomol., xxv, 1910, p. 18 (♀♂). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 276.

Male and Female.—" Similar to *E. coarctatus,* L., but the thorax less globular, more elongate oval. Petiole (=first abdominal segment) much longer, as long as the thorax ; parallel-sided in its basal third, then suddenly widening to twice the width, the apical third also parallel-sided, with distinct, median, longitudinal groove ; in profile straight in the basal half, rather strongly swollen and curved in the apical half. Puncturation as in *coarctatus*, coarse and very dense on head and thorax, the intervals smaller than the punctures ; first and second tergites with scattered, fine punctures.

" Black, with abundant orange-red and pale yellow markings. Head and thorax densely covered with long, yellowish-grey pile. The following parts are orange-red : mandibles, labrum, clypeus, a dot between the eyes, the basal half of the antennae as well as their under side, the pronotum (which, however, is blotched with black in the posterior corner), tegulae, scutellum, propodeum, a large spot below the wings, the sides of the first tergite, the hind margin of the second, tergites 3 to 6, and the legs. In addition, on the second tergite a large, median [orange-red] spot (which may be absent), connected with the apical band ; also two large, lateral spots in the anterior half of the tergite, often connected along the sides with the apical band. The following parts are yellow : in the ♀, the postscutellum, a narrow fascia at the apex of the first and second tergites, and stripes on the anterior surface of the tibiae ; in the ♂, the under side of the scape, the prothoracic lobes, the hind margin of the pronotum, two spots on the scutellum, the postscutellum, the lower corners of the propodeum, the apical margin of all tergites and sternites, two small, rounded spots anteriorly on the disk of the second tergite, and the anterior surface of all femora and tibiae.

" Length of body : 16 mm."

Described on one male and two females from " Kapland " (probably Cape Province).

The species is unknown to me. Since it is compared with *E. coarctatus*, we must assume that the hind margin of the second segment is duplicate and that it consequently belongs in *Eumenes* proper. It appears to be quite distinct from any of the species which I have seen, although it does not seem feasible to include it in the key on the strength of published characters. Its closest ally is evidently *E. acuminatus*, but the size (although clearly based upon the total length, which varies considerably with the retraction of the posterior segments) is much too large for that species.

Subgenus AFREUMENES, J. Bequaert.

Eumenes melanosoma, H. de Saussure.

The outstanding morphological feature of this species is the presence of a sharp, vertical carina shortly before the *hind* margin of the mesopleura. Although this peculiarity is not mentioned in the description of *E. sulcigastra*, and I have had no occasion to examine the type, I have little doubt that species is the typical colour form of *E. melanosoma*. The various structures pointed out by Gribodo are present in *melanosoma*, which was originally described by error as of Java. As a matter of fact, it has never been found outside the African continent, where it occurs south of 12° N., extending in the west to 12° S., and in the east at least as far as Durban.

The morphological characters of the species have been described and illustrated in my paper of 1918. It may still be added that the apex of the second tergite is not duplicate; but the punctate, preapical area is separated from the smooth, impunctate, depressed, terminal margin by a fine, transverse, dotted line.

Several colour phases may be recognised. Although the extremes are conspicuously different, there are many intergrades, so that it is not always evident which varietal name to use. Possibly some of the transitional forms may be due to hybridism, as several phases often occur in the same geographical area. They are by no means as clearly defined as in the case of *E. maxillosus*.

Key to Colour Phases of E. melanosoma.

1. Body mainly black, with relatively few ferruginous spots on head, thorax, legs, first abdominal segment, and rarely on the second. Pale yellow or ivory-white markings are either absent or very much reduced. Wings uniformly smoky or dark brown, often with purple reflection 2
   Body black and ferruginous red, more or less abundantly marked with bright yellow. Wings subhyaline or slightly infuscate, with amber-yellow tinge. 4
2. Black, without any yellow or ivory-white markings. Head, thorax, and first segment scantily marked with ferruginous. var. *aterrimus*, A. v. Schulthess
   At least the apex of the first tergite or the propodeum spotted with pale yellow or ivory-white 3
3. Abdomen black with a very narrow, yellowish-white or ivory-white fascia at the apex of the first, or first and second tergites, often interrupted in the middle. Thorax not marked with pale yellow or white. typical *E. melanosoma*
   Ivory-white markings more abundant, being present, not only at the apex of the first two tergites, but also on the thorax (at least two spots on pro-

podeum; often also spots on pronotum, scutellum, and postscutellum); head and legs generally marked with pale yellow . var. *decipiens*, Kirby

4. Abdomen without yellow markings or these are reduced to narrow and more or less interrupted fasciae at the apex of the first, or first and second tergites. Propodeum with two yellow spots of variable size; rarely the pronotum, scutellum, and postscutellum also spotted with yellow. Body more or less extensively ferruginous red . . . var. *longirostris*, Gerstaecker

Abdomen, or thorax, or both abundantly marked with yellow . . 5

5. Abdomen, behind the first segment, yellow dorsally, with a black cross over the second tergite . . . . . var. *affinis*, A. v. Schulthess

Abdomen with the yellow markings much less extensive or almost absent. 6

6. Abdomen almost without yellow; usually with two yellow spots near the apical margin of the second tergite. Thorax and head quite richly marked with yellow . . . . . . var. *aethiopicus*, H. de Saussure

Most of the abdominal tergites with yellow spots near the apex; often also a yellow spot on each side of the second tergite before the middle. var. *distinctus*, H. de Saussure

Eumenes melanosoma, typical colour phase.

Eumenes melanosoma, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 61, (♀♂), pl. xii, fig. 1.

Eumenes melanosomus, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 79 (♀♂) and 281.

Eumenes sulcigastra, Gribodo, Ann. Mus. Civ. Genova, xxi, 1884, p. 295 (♀).

Eumenes sulcigaster, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 283.

This colour phase is quite widely distributed throughout equatorial Africa, being known from Cameroon (Lolodorf and Batanga, according to specimens in the Carnegie Museum) and Abyssinia (*sulcigastra*, Gribodo) to the Lower Congo (Boma and Malela, in the Congo Museum at Tervueren), Katanga, and Natal. I have seen at the British Museum several specimens collected by S. A. Neave in Uganda (S.-E. Ankole; western shores of Lake Victoria; W. Ankole).

Katanga: Panda River, 2 ♂ and 1 ♀, October 2, 1920, and Kimilolo River, 1 ♀, July 3, 1920 (Mich. Bequaert); Lufire River and 150 to 200 miles west of Kambove (A. A. Neave), Brit. Mus.

Natal: Stella Bush, 1 ♂ (Marley), Natal Mus.; Clairmont, 1 ♂ (Marley); Durban, 2 ♂ (W. Haygarth), 1 ♂ (Ross), 1 ♀ (Marley); Eshowe, 1 ♀ (Marley), S. Afr. Mus.

One of the males of Durban had been identified as *E. melanosoma* var. *longirostris*, and it is evidently an intergrade to that colour phase.

Owing to the total absence of yellow on the thorax, I prefer to include it among typical *melanosoma*. Some specimens have hardly a trace of ferruginous, while others are distinctly blotched with that colour. In the males of Katanga, the clypeus is reddish without pale yellow, in those of Natal it is almost entirely ivory-white.

Eumenes melanosoma var. *aterrimus*, A. v. Schulthess.

Eumenes melanosoma var. *aterrimus*, A. v. Schulthess, Societas Entomol., xxv, 1910, p. 18 (♀). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 81, 82, and 282 (♀♂).

This extreme melanistic form is so slightly different from the typical phase that it hardly deserves a name. A. v. Schulthess has recorded it from Togo, Cameroon, the Belgian Congo, Nyasaland, and Zanzibar. I have seen at the British Museum numerous specimens from Kenya Colony and the north-western shore of Lake Nyasa (S. A. Neave).

Eumenes melanosoma var. *decipiens*, Kirby.

Eumenes decipiens, W. F. Kirby, Ann. Mag. Nat. Hist., (6), xviii, 1896, p. 265 (no sex).

Eumenes melanosomus var. *decipiens*, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 81, 82, and 282 (♀♂), figs. 64-69 (on p. 79).

Eumenes gracillima, A. Tullgren, Ark. f. Zool., i, 1904, p. 445, pl. xxiii, fig. 8 (♂).

Eumenes moseri, W. A. Schulz, Spolia Hymenopterologica, 1906, p. 315, figs. 11*a*-11*c* (♀).

Originally described from the Ogowe River, Gaboon, this colour phase appears to be strictly West African. It extends from Sierra Leone, Togo, Cameroon (Metet, Lolodorf, Efulen, and Batanga, at the Carnegie Museum), and Fernando Po (several specimens at the British Museum, including one of the " types " of *E. moseri*), throughout the Belgian Congo (as far south-east as the Manyema), to Uganda (numerous specimens in the British Museum), and Ilala in the Maramas district, Kenya Colony (S. A. Neave, Brit. Mus.).

There are also at the British Museum several specimens from north-east Rhodesia and Mashonaland which are evidently transitional between the typical form and the var. *decipiens*.

Eumenes melanosoma var. *longirostris*, Gerstaecker.

Eumenes longirostris, Gerstaecker, Monatsber. Preuss. Ak. Wiss. Berlin, 1857, p. 462 (♂).

Eumenes melanosomus var. *longirostris*, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 81, 83, and 282 (♀♂).

Eumenes erythraspis, P. Cameron, Wiss. Ergebn. Schwed. Zool. Exp. Kilimandjaro, ii, 8, 6, 1910, pp. 175 and 179 (♀).

As here understood, this colour phase is typically East African, extending from Kenya Colony (Voi.—Brit. Mus.) to Zululand. Westward it barely enters the north-eastern Belgian Congo (on the Lower Semliki), is more abundant in Upper Katanga, and even reaches Angola (Brit. Mus.).

Katanga: Lubumbashi, 1 ♂, June 3, 1920, and 1 ♀, June 10, 1920 (Mich. Bequaert).

Transvaal: Acornhoek, 1 ♂, November 1918 (R. W. Tucker), S.A. Mus.

Natal: Mfongosi, 1 ♂, March 1916 (W. E. Jones), S.A. Mus.

According to Gerstaecker's original description, *longirostris* is black and ferruginous red, with a yellow spot on each side of the propodeum, a pair of elongate yellow spots behind the middle of the first tergite, a yellow, apical margin on the first tergite, and an interrupted, yellow, transverse fascia at the apex of the second tergite. Among the specimens here referred to *longirostris*, the male from Lubumbashi, Katanga, comes quite near this description, but the interrupted, pale fascia at the apex of the second tergite is exceedingly narrow; the clypeus is totally yellow. The female from the same locality is quite similar, but has a reddish-brown clypeus, and the second tergite lacks the apical fascia. In the male of Acornhoek there is a small, yellow spot on each side of the pronotum; while the male of Mfongosi has, in addition, two yellow dots on the scutellum, an interrupted, yellow band on the postscutellum, and traces of preapical, lateral, yellow spots on tergites 3, 4, and 5.

Eumenes melanosoma var. *affinis*, A. v. Schulthess.

Eumenes melanosoma var. *affinis*, A. v. Schulthess, Societas Entomol., xxv, 1910, p. 18 (♀♂). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 81 and 282.

Eumenes xanthaspis, P. Cameron, Wiss. Ergebn. Schwed. Zool. Exp. Kilimandjaro, ii, 8, 6, 1910, p. 175 (♂).

In coloration this interesting form is a perfect mimic of the typical colour phase of *E. lepeleterii*. It is apparently quite rare and peculiar to the coastal districts of equatorial East Africa. A. v. Schulthess' specimens were from Daressalaam, while *E. xanthaspis* was described from Kibonoto, on the lower slopes of Mt. Kilimanjaro. At the United States National Museum I have seen a male from Jombene Hills, Kenya Colony (Chanler-Hohnel Expedition), which is here somewhat more fully described.

Black, with abundant bright yellow markings as follows: clypeus; mandibles; a lozenge-shaped spot between the antennae; sinus of eyes; outer orbits; scape quite broadly below; pronotum (except for a black, triangular spot on each side before the wings); scutellum (except posteriorly); major part of mesopleura; propodeum (except for a black stripe on the median groove); outer side of fore femora, of all tibiae, and of fore and middle basitarsi; an elongate spot on each side beyond the middle and a narrow apical margin on first abdominal tergite; broad, preapical bands on tergites 2 to 5, interrupted in the middle; also a broad, somewhat triangular spot on each side in the basal half of second tergite; and small, lateral spots on sixth tergite. Major part of antennae, anterior face of thorax, tegulae, legs (except where yellow), sides of first abdominal segment (more extensively before the yellow, apical margin), sides of second tergite, and all the sternites, more or less ferruginous; this colour also suffuses the black of the pleura. Wings subhyaline, tinged with amber yellow.

Length (h.+th.+t. 1+2): 13 mm.

Another male from Kibwezi, Kenya Colony, 3000 ft., April 2–4, 1911 (S. A. Neave), is coloured exactly like the Jombene specimen.

Eumenes melanosoma var. *aethiopicus*, H. de Saussure.

Eumenes aethiopica, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 62 (♀).
Eumenes melanosoma var. *aethiopicus*, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 81, 84, and 281 (♀♂).

This form appears to be restricted to the West African subregion. I have seen the type, of the Congo, at the British Museum, which also contains additional specimens from Sierra Leone, the Gold Coast, Northern Nigeria, and Uganda. It has been reported from the Gaboon, and it is quite widely distributed in the Belgian Congo (apparently not in Upper Katanga). At the Carnegie Museum, Pittsburgh, there is a female from Olama, Cameroon.

Eumenes melanosoma var. *distinctus*, H. de Saussure.

Eumenes distinctus, H. de Saussure, Et. Fam. Vesp., iii, 1856, p. 143 (♂).

Eumenes melanosoma var. *distinctus*, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 82. 84, and 282 (♀♂).

Eumenes walkeri, C. Ritsema, Tijdschr. v. Entom., xvii, 1874, p. 199, pl. xi, fig. 7 (♂).

This colour phase has much the same distribution as the var. *aethiopicus*. I have seen it at the British Museum from Sierra Leone, Northern Nigeria, and Uganda. It is common in the Belgian Congo, where it even enters Upper Katanga. Possibly it might be found in Rhodesia.

Katanga: Lubumbashi, several ♀ and ♂, June and July 1920 (Mich. Bequaert).

The yellow markings are quite variable in extent, and some specimens appear to be intergrades between this and the var. *aethiopicus*.

Subgenus Delta, H. de Saussure.

Eumenes phthisicus, Gerstaecker.

(Text-figure 9.)

Eumenes phthisicus, Gerstaecker, Monatsb. Preuss. Ak. Wiss. Berlin, 1857, p. 463 (♂); in Peters, Reise n. Mossambique, Zool., v, 1862, p. 463, pl. xxx, fig. 2 (♂). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 283.

This species has not yet been fully described. Gerstaecker knew only the male, and his description is incomplete in several important particulars, such as the shape of the antennal hook. The female is, so far as I know, undescribed.

Female (undescribed).—Head rather flattened, seen in front slightly wider than high. Clypeus a little longer than wide, elongate hexagonal, very slightly and evenly convex; the anterior, free portion nearly as long as the basal, interocular part; the apical margin about one-half the total width of the clypeus, very broadly and arcuately emarginate, with distinct and rather sharp edges. Vertex without fovea. Ocelli placed in a flattened triangle; the posterior ocelli distinctly farther apart than from the inner orbits, about as far from the hind margin of the vertex as from the eyes; anterior ocellus a little larger. Front slightly raised and very bluntly carinate between the antennae. Eyes bare, but slightly farther apart on the vertex than at the clypeus. Vertex and temples quite narrow, margined behind with a continuous, sharp rim. The shape of the mandibles is characteristic; they are moderately long and slender, decussate, straight, slightly curved at the blunt apex, with three narrow notches along the inner margin; of the three teeth thus defined, the first (nearest the base, but placed about midway) is small and blunt; the two following are very broad, flattened plates, the second being about twice as long as the third; beyond the third, the inner margin forms a much narrower plate extending to near the apex; the inner margin is set off by a carina accompanied by a deep groove, which bears numerous stiff setae; shortly before the apex the setae are so numerous as to form a brush; owing to the development of the lamellar teeth, and also to a slight widening of the outer margin, the mandible is nearly as broad in its apical half as at the base. Third segment of maxillary palpi short, only half as long as the second, and about the length of the fourth and fifth. Antennae rather short, moderately swollen toward the apical half; segments—6 and 7 longer than wide, 8 almost square, 9 to 11 slightly wider than long, 12 a little longer than wide at base. Thorax elongate globular, nearly subglobular, shorter and more convex than in the other Ethiopian species of the subgenus *Delta*; but little longer than high in profile or than broad seen from above. Pronotum squarely truncate; the anterior margin rimmed throughout with a fine, raised line; on the sides, below the humeral angles, there is at first only a blunt ridge, but in the lower part this becomes a wavy carina. Humeral angles broadly rounded off, the pronotum but little narrowed anteriorly. Mesonotum slightly longer than wide, with a fine, median, impressed line in its anterior half, generally hidden under the appressed pilosity. Scutellum and postscutellum evenly and slightly convex, forming a continuous curve with the mesonotum; the scutellum partly and the postscutellum entirely within the posterior slope of the thorax; neither of them show a median raised line or depression. Propodeum very short and moderately convex; seen from above hardly longer than postscutellum, rounded off, without ridges or projecting angles on the sides; in the upper half it is merely divided by a fine, median, longitudinal, impressed line; in the lower half it is very broadly and shallowly excavated toward the base of the abdomen; just above the valvulae the sides are conspicuously compressed into a short ridge, ending posteriorly in a sharp point. Mesopleura without carinae along the anterior and posterior epicnemial depressions, which are, however, quite pronounced. Legs slender, as usual. Venation of wings of the ordinary *Eumenes* type; the third cubital cell rather longer at the cubital vein than usual. First abdominal segment very long and slender, more so than in the other African species of the subgenus *Delta*; nearly as long as head and thorax in profile; about five times as long as wide at apex, seen from above; in profile strongly curved and quite gradually and slightly swollen from the base to before the apex; seen from above it very gently widens posteriorly (even more evenly than in *E. lepeleterii*), the apex being not much over twice the width of the base; dorsally it is uniformly convex, without any trace of groove; the spiracles are not in the least visible from above, and they are just barely raised on the sides. Second segment elongate oval and slightly depressed, about equally convex dorsally and ventrally, nearly one and one-half times as long as high in profile, and but little longer than wide seen from above; basal neck long, a little over half as wide as the apex of the first segment, as conspicuous as in many species of *Zethus*; apical margin simple, depressed; sternite more convex than usual, slightly flattened at base. Head and thorax quite densely covered with large but rather shallow punctures, giving it a minutely reticulate appearance; vertex, temples, tegulae, and epicnemial depressions for the fore and middle legs nearly impunctate; the sides of the propodeum also with rather sparse and small punctures; the anterior margin of the scutellum with a smooth area, which extends somewhat backward in the middle; clypeus with few, very scattered, small punctures, which are somewhat more distinct in the basal half. Abdomen impunctate under an ordinary lens; but under high magnification it

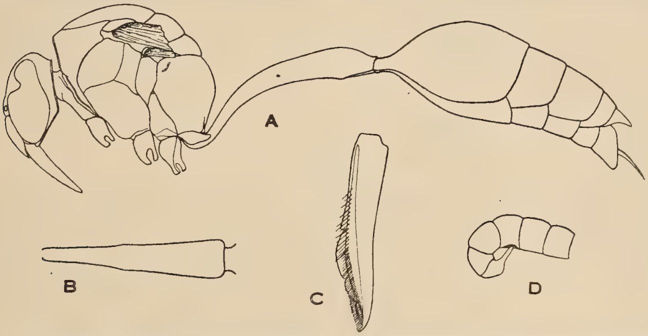

Fig. 9.—*Eumenes phthisicus*, Gerstaecker. *A*, female in profile; *B*, first tergite of female from above; *C*, mandible of female; *D*, terminal segments of male antenna.

is densely and uniformly covered with microscopic punctures. Head and thorax densely covered with short, greyish-white, somewhat matted pile, with a slight silvery sheen, more noticeable on the clypeus; abdomen and legs nearly bare, with a faint greyish bloom.

Black, with indefinite ferruginous brown blotches on mandibles, base and under side of antennae, clypeus, pronotum, tegulae, pleura, scutellum, propodeum, sides of first abdominal segment, base of second, succeeding sternites, last tergite, and legs. The ivory-white markings are reduced to a short line along the outer orbits above, two small spots before the apex and a narrow line on each side of the apical margin on the first tergite, and a quite narrow preapical fascia on the second tergite, generally interrupted in the middle. Wings faintly smoky anteriorly, somewhat brownish in the costal cell, the radial cell more purplish. The extent of the ferruginous and ivory-white markings varies, not two of the five females which I have seen being alike in this respect.

Length (h.+th.+t. 1+2): 14·5 to 16 mm.

Male.—Clypeus much longer than wide; the anterior, free portion distinctly longer than the basal, interocular part; the apical margin about one-half the total width of the clypeus, broadly and arcuately emarginate, with sharp edges. Posterior ocelli about twice as far apart as from the inner orbits. Eyes a little less than twice as far apart on the vertex as at the clypeus. Mandibles of more usual shape; the lamellar teeth along the inner margin much narrower than in the female; the conspicuous row of setae and preapical brush absent. Antennae moderately and quite gently swollen toward apical half; segments—7 and 8 slightly longer than wide, 9 and 10 nearly square, 11 and 12 longer than wide; last, hook-like segment hunchbacked, shaped like a duck's head in profile: the basal half much swollen, the apical part very abruptly narrowed to a blunt point, which fits in a shallow pit at the under side and about the middle of the tenth segment. Last abdominal sternite uniformly convex, smooth, impunctate. Clypeus either ferruginous and black as in female, or more or less broadly margined with ivory-white; the inner orbits narrowly ivory-white from the clypeus to the bottom of the ocular sinus. In one of the males from Zululand there is a narrow ivory-white line along the posterior margin of the post-scutellum. The remainder as in the female.

Length (h.+th.+t. 1+2): 12 to 15 mm.

E. phthisicus, originally described from Mosambique, has been but rarely recorded since. Schouteden (Rev. Zool. Afric., vi, 1919, p. 175) reports it from Katanga (between Kayambo and Dikulwe—S. A. Neave), upon the strength of a specimen named by R. de Buysson. It is, however, not restricted to East Africa. There are at the Carnegie Museum, Pittsburgh, several females from Cameroon (Bipindi, Efulen, and Lolodorf—H. L. Weber and A. I. Good).

Southern Rhodesia: Bulawayo, 1 ♀, April 23, 1912 (G. Arnold), Rhodesia Mus.; Bindura, 1 ♀ (D. Coghill), S.A. Mus.; Salisbury, 1 ♂, April 1900 (G. K. Marshall).

Portuguese East Africa: Lourenco Marques, several ♀ and ♂ (H. Junod).

Natal: Stella Bush, 1 ♀, January 1915 (Marley); Mfongosi, 2 ♂, May 1916 (W. E. Jones), S.A. Mus.

Dr. H. Brauns has communicated a male, said to have been compared with Gerstaecker's type by Dr. A. v. Schulthess.

Eumenes caffer (Linnaeus).

(Text-figure 10.)

Vespa caffra, Linnaeus, Syst. Nat., 12th ed., i, 2, 1767, p. 951 (no sex).

Eumenes caffra, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 45 (♀). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 275 (in part; not pp. 69 and 72).

Sphex cruciata, Christ, Naturgesch. d. Insecten, 1791, p. 317, pl. xxxii, fig. 2.

Vespa cratiata, Lichtenstein, Catalogus Mus. Zool. Hamburgi, 1796, iii, Insecta, p. 202.

Sphex crucigera, Weber, Observ. Entomol., 1801, p. 101.

In my Revision of the Vespidae of the Belgian Congo, I had reached the conclusion that *E. caffer* (Linnaeus) was not morphologically distinct from *E. campaniformis* (Fabricius), and I regarded *E. formosa*, H. de Saussure, as identical with *E. caffer*. Unfortunately I was unable at the time to examine South African specimens of *caffer*. I have since found that the true *E. caffer* of the Cape differs in a number of important particulars from the several colour phases of *E. campaniformis*. The description and drawings which I gave in 1918 of the morphology of *E. caffer* do not apply to that species, but to *E. campaniformis* (Fabricius). It is therefore necessary to point out the structural peculiarities of *E. caffer*.

Female.—Head seen in front but little broader than high. Clypeus about as long as wide, elongate hexagonal; its apical, free portion slightly shorter than the basal, interocular part; its apical margin straight, with bluntly rounded edges. Ocelli in a flattened triangle, the posterior ocelli a little farther apart than from the inner orbits, about as far from the hind margin of the vertex as from the eyes. Antennae moderately swollen; segments—7 and 8 nearly square, 9 to 11 wider than long, 12 about as long as wide at base. Thorax elongate oval, about one-third longer than high, somewhat longer than in *E. campaniformis*; the mesonotum conspicuously longer than wide.

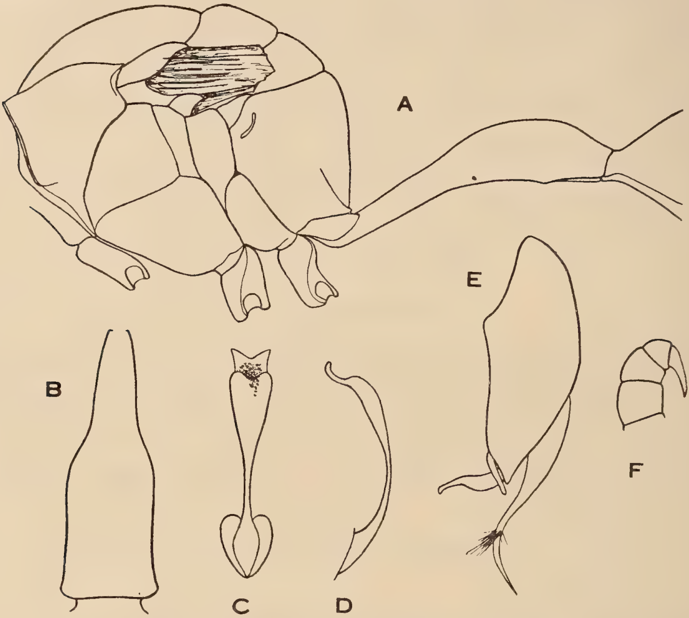

FIG. 10.—*Eumenes caffer* (Linnaeus). *A*, thorax and first tergite of female in profile; *B*, first tergite of female from above; *C*, penis from above; *D*, penis in profile; *E*, male genitalia in profile, outer view; *F*, terminal segments of male antenna.

First abdominal segment distinctly shorter than the thorax; its general shape as in *campaniformis*, but of stouter build; in profile its apical half is relatively more swollen as compared with the base; seen from above its apical, widened portion is not quite twice as long as its greatest width and is parallel-sided, so that the passage to the basal stalk is much more abrupt than in *campaniformis*. The broadened part of the first tergite bears a few scattered, but distinct punctures; whereas in *campaniformis* it is almost impunctate, with very few, quite minute punctures. Second sternite normally convex. The hind tarsi are about as long as the hind femur and trochanter, but much longer than the tibia. The few differences from *E. campani-*

formis are slight and of degree only, and, were it not for the striking characters presented by the male antennae and genitalia, one would never feel quite certain of the specific distinction of the two forms.

The maxillary and labial palpi are more slender in *E. caffer* than in *E. campaniformis*; this is especially striking for the three basal segments of the maxillary palpi, whose third segment is decidedly longer than the three apical segments together.

Male.—The difference in the shape of the thorax also holds good in this sex; but it is much less evident in the shape of the first abdominal segment, which is more slender than in the female. The antennal hook is slender, gradually tapering from a triangular base to a long, very sharp, straight apex, reaching to slightly beyond the middle of the tenth antennal segment; there is, however, no pit or excavation of that segment to receive it. The antennal hook is in general outline more like that of *E. lepeleterii* than *E. campaniformis*, though somewhat more pointed than in the former. Gribodo (Mem. Ac. Sci. Bologna, Sc. Nat., (5), v, 2, 1895, p. 90) has correctly described it. The male genitalia are strikingly dissimilar from those of *E. campaniformis*, *E. lepeleterii*, and *E. maxillosus*, which is the more remarkable since they are so much alike in the three last-named species. The whole organ is quite thick and bulky, very wide seen in profile; the penis is conspicuously narrowed beyond the swollen base into a slender stalk and widens again into a terminal, long and broad, more or less saddle-shaped plate, which is deeply emarginate at the apex.

Length (h.+th.+t. 1+2): ♀, 19 to 20 mm.; ♂, 13 to 18 mm. The male is unusually stout in this species.

E. caffer appears to be restricted to South Africa; with the exception of Potchefstroom, all the localities from which I have seen it are south of the Orange and Vaal Rivers. R. du Buysson (Bull. Soc. Ent. France, 1908, p. 134; in A. Chevalier, L'Afrique Centrale Française, 1908, p. 707; and Act. Soc. Linn. Bordeaux, lxiv, 1910, p. 228) has recorded it from the Atlantic coast of the Sahara as well as from the central Sahara (Oued Tidek; valley of Taghazi, north of the Air); but I have little doubt that the specimens in question were misidentified. Most probably they belonged to some colour phase of *E. arbustorum* (Panzer).

I have seen specimens from the following localities:—

Transvaal: Potchefstroom, 1 ♀ (T. Ayres); S.A. Mus.

Orange Free State: Smithfield, 1 ♀ and 1 ♂ (Kannemeyer), S.A. Mus.

Cape Province: East London, 1 ♀ (J. Wood); O'okiep, 1 ♀, September 1890 (P.M.L.); Henkries, Bushmanland, 1 ♂, October 1911 (Lightfoot); Jackals Water, Bushmanland, 1 ♂, October 1911 (Lightfoot)—all in S.A. Mus.; Ceres and Witzenburg Valley, 3500 feet, Ceres district (R. E. Turner), Brit. Mus.; Willowmore, 1 ♀ and 1 ♂ (H. Brauns).

In coloration *E. caffer* appears to vary but little. It is black with the following bright yellow markings: clypeus (in both sexes); the centre of the face between the antennae; the inner orbits from the clypeus to half-way in the sinus of the eyes; basal half of mandibles, gradually fading into the ferruginous apex; under side of scape; a narrow line along the outer orbits in the upper part of the temples; pronotum; upper plate of mesopleura, continuous with a large, triangular spot on the lower plate; a very wide band across the scutellum; postscutellum except anteriorly; propodeum except for a broad, median stripe; posterior half of tegulae; four spots on the swollen portion of the first tergite, two above the spiracular protuberances and two before the apex extending laterally to the edges, but not connected medially; the remainder of the abdomen, except for an elongate, median, black spot on the basal half of the second sternite (drawn out into a point posteriorly) and a black cross over the second tergite, the cross gradually narrowing and fading away on the succeeding tergites; an elongate spot on middle coxae; the under side of fore and middle femora; the upper side of all tibiae and of fore and middle basitarsi. The apex of mandibles, the basal half of the flagellum and a line on the under side of its apical half, the under side of the broader, apical half of the first segment, the sides of second tergite and sternite near the base, and the legs wherever not yellow, are ferruginous red. The wings are subhyaline, with a yellow, amber-coloured tinge and a slight, purplish black spot in the radial cell. The two sexes are coloured almost exactly alike.

It is possible that there exists in the coastal region of the Cape Province a colour phase of *E. caffer* similar to *E. campaniformis* var. *pulcherrimus*. See the discussion of that form, p. 551.

Eumenes campaniformis (Fabricius).

(Text-figure 11.)

The structural characters of this species have been described and illustrated in my Revision of the Vespidae of the Belgian Congo (1918), under the heading *E. caffer* (p. 69, figs. 50–55). It was believed at the time that *caffer* and *campaniformis* were but two colour phases of the same species. They are, however, morphologically quite distinct, as I have shown above.

As *E. campaniformis* assumes several colour phases, some of which are deceivingly similar to forms of other species, its chief characters may be pointed out. In the female the head as seen in front is nearly one-fifth broader than high ; the eyes are but little farther apart on the vertex than at the clypeus ; the posterior ocelli are much less than twice as far apart as from the inner orbits ; the sides of the propodeum are completely rounded off between the dorsal and the ventral areas ; the first abdominal segment is intermediate in shape between that of *E. maxillosus* and *E. lepeleterii* ; it approaches that of the former, though it is more slender, being about as long as the thorax ; seen from above it is distinctly divided into a basal, stalk-like half and an apical, broader portion, both with subparallel sides and the passage between the two rather abrupt ; the apex does not widen out as in *E. maxillosus,* and is about one-fourth of the total length of the segment ; second sternite normally convex in the centre. The hind tarsi are about as long as the hind femur and trochanter. In the male the first segment is somewhat more slender ; the hook-like segment of the antennae approaches that of *E. maxillosus,* being in profile slightly thickened beyond the apex ; but seen from above it is not widened in its apical half ; it is rather abruptly and sharply pointed at the apex, which rests in a small excavation on the under side, near the extremity of the tenth antennal segment ; the eyes are distinctly nearer at the clypeus than on the vertex, and the posterior ocelli are about twice as far apart as from the inner orbits. An examination of much additional material has convinced me that the difference in the female antennae, which I had formerly relied upon, is imaginary. Neither is there any reliable difference in the development of the groove-like depression of the last abdominal sternite in the male.

E. campaniformis and its several colour phases have a wide range over the Ethiopian, Oriental, Malayan, and Papuan regions, as far as Mesopotamia, southern China, Formosa, New Guinea, the Solomon Islands, and Queensland. In Africa it is known with certainty from Lower Egypt and the Senegal River to Angola in the west, and to the Orange Free State and Natal in the east. It is seemingly absent from the Cape Province, where it appears to be replaced by *E. caffer,* although the ranges of the two species overlap in the Orange Free State and southern Transvaal (see the map in my paper of 1918, p. 71, which should, however, be amended to cover the whole of

Egypt, Mesopotamia, and southern Persia, and to exclude south-western Africa and the Cape Province). It is not known from the Malagasy region.

If we regard *campaniformis* and *esuriens* as mere colour phases of one morphological type, the specific name should be *campaniformis*, which is much older than *esuriens*.

My former treatment of the colour phases of *E. campaniformis* (1918) was wholly inadequate, owing to the restricted material of which I disposed and to my erroneous interpretation of *E. caffer* (Linnaeus). The morphological species *campaniformis* evidently presents many colour phases, the study of which is fully as interesting as those of *E. maxillosus*. Since several of them occur in South Africa, I have thought it appropriate to present a revision of all the variations. As indicated below, there are probably a number of additional colour phases worthy of recognition, but as I have generally not seen them, they are left nameless for the present. There is always a possibility that the types might prove to be morphologically distinct from *E. campaniformis*. Moreover, the distribution of the several colour phases of *E. campaniformis* can hardly be worked out at present: they have been too frequently confused with one another and with similar colour variations of allied species (especially *E. lepeleterii*).

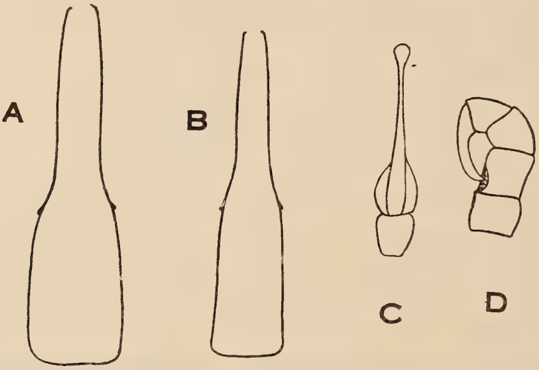

FIG. 11.—*Eumenes campaniformis* (Fabricius). *A*, first tergite of female from above; *B*, first tergite of male from above; *C*, penis from above; *D*, terminal segments of male antenna.

Key to Colour Phases of E. campaniformis.

1. Mostly black, with a few dark ferruginous markings on head, thorax, legs, and first two abdominal segments. Clypeus and spots on head yellow; rarely the pronotum somewhat yellowish along anterior margin.
   var. *pseudodyscherus*, J. Bequaert

More extensively ferruginous or ferruginous and yellow; at least the posterior abdominal segments marked with yellow or orange 2

2. Thorax extensively ferruginous, but with no or very little yellow. First abdominal tergite extensively and second at base ferruginous. The posterior abdominal tergites margined with orange (usually also the extreme apical corners of second tergite) . . . var. *rendalli*, Bingham

Thorax and abdomen abundantly marked with yellow 3

3. Abdomen almost entirely yellow; first segment extensively ferruginous, with a black, preapical spot separating two yellow, elongate markings; the second tergite with a narrow, spear-shaped black mark, extending from the base to beyond the middle . . . var. *rhodesiensis*, J. Bequaert

Second tergite of the abdomen with a black cross, or a black transverse band. 4

4. Apex of second tergite with a broad, continuous, yellow band, which is at most faintly notched in the middle 5

Apical yellow band of second tergite broadly interrupted by black medially. 7

5. Thorax mostly yellow and ferruginous, the mesonotum often with black spots; base of second tergite ferruginous, separated by a narrow, black fascia from the wide, yellow, apical third . . . . var. *esuriens* (Fabricius)

Thorax mostly black and yellow, the mesonotum either entirely black or with a small russet spot; the transverse, black fascia of second tergite broad. 6

6. Basal third of second tergite ferruginous, with or without small, yellow spots. Scutellum and propodeum often more or less ferruginous.
var. *gracilis*, H. de Saussure

Basal third of second tergite mostly yellow, but divided by a longitudinal, median, black line or band. Thorax with little or no ferruginous.
typical *campaniformis* (Fabricius)

7. Second tergite with extensive yellow spots at the base, the black forming a distinct cross over the abdomen . . var. *formosus*, H. de Saussure

Second tergite more or less ferruginous at base, the black more extensive and not forming a cross over the abdomen.
var. *marshalli*, J. Bequaert (? =*pulcherrimus*, A. v. Schulthess)

Eumenes campaniformis, typical colour phase.

Vespa campaniformis, Fabricius, Syst. Entom., 1775, p. 371 (no sex).

Eumenes campaniformis, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 55 (♀).

Eumenes esuriens var. *campaniformis*, R. du Buysson, Abh. Senckenberg. Naturf. Ges., xxxiv, 2, 1911, p. 230.

Eumenes tricolor, P. Cameron, Nova Guinea, v, Zool., 1, 1906, p. 64 (♀) (not of F. Smith, 1860). See Meade Waldo, Ann. Mag. Nat. Hist., (8), xiv, 1914, p. 404.

The name *campaniformis* was originally proposed by Fabricius for a wasp of Australia, described as follows: " Black, variegated with yellow; petiole of the abdomen ferruginous, black at apex and with two yellow spots. A little smaller than the preceding species [i.e.

E. arcuata]. Antennae ferruginous, brownish at apex. Head black, the front and the orbits of eyes yellow. Tongue ferruginous. Thorax black; the anterior lobe, a large spot below the wings, and a small dot before the wings, yellow. Scutellum yellow, with a black band. Thorax below the scutellum yellow, with a black median groove. Petiole of abdomen elongate, curved, ferruginous, black at apex, on either side with a yellow dot. Second segment the largest, with two basal spots and the margin yellow. Remaining segments with yellow margin. Legs yellow." The type is in the Banks Collection, at the British Museum.

Typical *campaniformis* differs but little from the var. *esuriens*. The most important point is that the ferruginous base of the second tergite is extensively or completely replaced by yellow; generally, too, the transverse black band of the second tergite is broader and connected on the middle line with the base of the tergite (so as to form a black inverted T); while the yellow apical band of the first tergite is interrupted in the middle, the ferruginous colour is much reduced on the thorax, being replaced either by black or by yellow.

Length (h.+th.+t. 1+2): ♀, 15 to 17 mm.; ♂, 14·5 mm.

This colour phase is found in the Malayan and Australian regions. I have seen it from Java, the Philippine Islands, Queensland, and Yule Island, near New Guinea.

E. urvillei, de Saussure (Et. Fam. Vesp., i, 1852, p. 59, ♀♂), appears to have been based upon two distinct colour forms. The male of Triton Bay, on the coast of New Guinea, evidently does not differ from typical *E. campaniformis*. The female of Banda Island, however, is said to have the second tergite entirely ferruginous at base, without yellow spots, but with a broad yellow apical band, interrupted in the middle; the mesonotum is black and the propodeum spotted with ferruginous and yellow; there are some other points, too, which seem to indicate that this may represent a peculiar colour phase worthy of recognition. The absence of yellow spots at the base of the second tergite excludes *E. edwardsii*, H. de Saussure. I have, however, as yet seen no specimens agreeing with the description. The types of *E. urvillei* should be at the Paris Museum.

Eumenes campaniformis var. *esuriens* (Fabricius).

Vespa esuriens, Fabricius, Mantissa Insect., i, 1787, p. 283 (no sex).

Eumenes esuriens, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 56, pl. xi, fig. 2 (♀♂). R. du Buysson, Abh. Senckenberg. Naturf. Ges., xxxiv, 2, 1911, p. 230 (in part).

Eumenes caffer var. *esuriens*, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 275 (♀♂) (in part) (not p. 73).

Vespa pediculata, Olivier, Encycl. Méthod. Hist. Nat., Ins., vi, 1791, p. 671 (no sex).

Eumenes boscii, H. de Saussure, Et. Fam. Vesp., iii, 1856, p. 132 (MS. name, as a synonym of *E. esuriens*).

This was first described by Fabricius from India, in the following terms (so far as coloration is concerned) : " Ferruginous, with yellow abdomen ; the curved petiole and first segment ferruginous, the former with yellow margin, the latter with black margin. Head yellow ; the antennae ferruginous with brown apex. Thorax yellow, the dorsum and hind part ferruginous. Scutellum yellow. Petiole of the abdomen ferruginous, yellow at the apex and slightly black before the apex. Second segment ferruginous, with black margin ; the remainder yellow. Wings darkened. Legs yellow, with ferruginous femora." There are some evident errors in this description : the statement that the second segment has a black margin is undoubtedly due to an oversight, as the black band runs over the middle of the tergite. If one allows for this, de Saussure's interpretation of *esuriens* is quite correct (his figure, however, is misleading and does not agree with the description in several important particulars), and I have seen specimens of both sexes, from India (Bombay, Abu, etc.), which have this coloration. They may be described as follows :—

Mostly yellow and ferruginous-red ; the black being restricted to a broad band across the vertex (including the ocelli), a narrower band on the occiput and outer part of the temples, an anterior and two lateral spots on the mesonotum, propleura, the base of the first segment, and a black, transverse band before its apex dorsally, a transverse band about the middle of the second tergite, the base of the succeeding tergites and apex of the last, and the apical two-thirds of the middle and hind tarsi ; the apical half of the flagellum is brownish on the upper side. The following parts are ferruginous : major part of antennae (the scape yellow beneath), apex of mandibles, mesonotum (except for the black spots and hind margin), scutellum, tegulae, sternum, metapleura, and propodeum (the propodeum dorsally with a small yellow spot on each side, close behind the wings), first segment (except for the black base and preapical band and the broad, yellow apex dorsally), the basal half of the second segment, the legs (except for the black, apical two-thirds of the middle and hind tarsi, and much yellow on the tibiae and on the upper side of the anterior femora). All other parts of the body yellow, and the posterior part of the second tergite is continuously so, without black division or interruption in the middle. There are no yellow spots on the ferruginous base of the second tergite. The wings are subhyaline, with amber-yellow tinge and with a darker, somewhat purplish spot in the radial cell.

The var. *esuriens* appears to be restricted to India proper, but it has been so commonly confused with the var. *gracilis* and typical *campaniformis* that its distribution cannot be correctly given. I have never seen it from the African continent. What I had recorded as *esuriens* from the Belgian Congo (Stanleyville and Bogoro) (Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 73) does not belong to the typical colour phase, but is described in the sequel as var. *marshalli*.

The specimens described by H. de Saussure (Et. Fam. Vesp., i, 1852, pp. 56 and 57) as *E. esuriens* var. B and var. C, in which the mesonotum is spotted with yellow or is almost completely yellow, probably represent a colour phase worthy of a varietal name. As I have seen no such specimens as yet, I refrain from naming it. The variety C is stated to have come from Persia ; it is quite possible that all Persian, and perhaps Mesopotamian, specimens are of that type.

Eumenes campaniformis var. *gracilis*, H. de Saussure.

Eumenes gracilis, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 57 (♀♂). Bingham, Fauna of Brit. India, Hym., i, 1897, p. 343, fig. 97 (♀♂).

Eumenes esuriens var. *gracilis*, H. de Saussure, Et. Fam. Vesp., iii, 1856, p. 132 (♀♂).

Eumenes caffer var. *gracilis*, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 275 (not p. 72).

This form was originally described from Egypt and the Senegal (types in the Paris Museum) in the following terms : " Female.—Very close to *E. esuriens* as well in size as in coloration. Head black ; hind margin of the eyes, front, sinus of the eyes, and clypeus yellow, the clypeus a little emarginate. Antennae ferruginous, with a black spot near the apex. Prothorax yellow, as is also a large spot beneath the wing, separated from the yellow prothorax by but a narrow, black line. Mesonotum black, with a small, bifurcate, russet spot anteriorly, Tegulae and scutellum russet. Postscutellum yellow. Propodeum yellow, divided by a russet band. Pleura russet and black. Petiole [=first abdominal segment] ferruginous, with black base, ending in two yellow spots which are preceded by a black band. Second abdominal segment ferruginous at base, ornamented with a black band over the middle, and with two yellow dots on the ferruginous part, the remainder yellow; the succeeding segments yellow, with black base; as a rule the yellow only is visible. Anus ferruginous. Under side of the abdomen russet, the segments margined with yellow, and a lozenge-shaped black spot, often indistinct, on the second sternite. Legs ferruginous, the tip of the tibiae yellow, as are also nearly the whole fore pair of legs. Wings ferruginous along the costa; veins ferruginous or brown; a brown spot in the radial cell. Male.—Clypeus without emargination. The first segment and the apex of the antennae black on the upper side, except on the two last segments. Mesothorax entirely black. The yellow margins of the abdominal segments narrower than in the female, so that the black base is distinct. Anus black. Legs spotted with black. The remainder as in the female." The author also notes variations of the female, in which the yellow spots of the second abdominal segment are absent, the base of this segment is black, and the stripe which divides the propodeum is also black; mesonotum entirely black; the black band of the second abdominal segment widened in the middle; the two yellow spots of the petiole fused into an apical band. There is a corresponding variety of the male without yellow spots on the second segment. In addition, de Saussure quotes Savigny, Descript. de l'Egypte, Atlas, Zool., Ins. Hym., 1812, pl. viii, fig. 6 (♀♂), as representing *gracilis.*

I have quoted this description at length because it clearly shows that the name *gracilis* should be used for a colour phase which merely differs, as de Saussure states, from the var. *esuriens* "in the mesonotum being entirely black or with but a small russet spot, in the black bands of the abdomen being broader and darker, and in the black spot of the antennae." There may or may not be two small yellow spots on the ferruginous base of the second tergite. R. du Buysson (Abh. Senckenberg. Naturf. Ges., xxxiv, 2, 1911, p. 230) seems to imply that the var. *gracilis* is strictly African (Egypt, Senegal, Congo, Sudan, etc.), whereas it really is the more common form in southern Asia. I have seen specimens which agree well with de Saussure's account, from Lower Siam (United States National Museum), Mombasa, Kenya Colony (G. M. Allen and G. Brooks—Mus. Comp. Zool., Cambridge), Fayum, Egypt, and Formosa. It is at present impossible to accurately define the area over which *gracilis* is found on the African continent. I have not seen it from the Belgian Congo; all the specimens I had referred to *gracilis* in Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 72, belong to the var. *rendalli*, Bingham.

Eumenes elegans, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 58 (♀), pl. xi, figs. 3 and 3*a*, was described from Djidda, Arabia, and the East Indies (in the Paris Museum) as follows: "Yellow with the vertex, mesothorax, and a band on the second segment of the abdomen, black. Wings brown. Female: length, 20 mm.; spread of wings, 38 mm. Head broad, ferruginous, darkened on the upper side toward apex; under side of the head, and even the sinus of eyes, very villose. Thorax villose, ferruginous; mesothorax [=mesonotum] black. Petiole [=first abdominal segment] ferruginous, black at base, its hind angles yellow. Abdomen ferruginous; the second segment margined with yellow and with a broad black band gradually passing into the ferruginous; under side of the segments darkened. Legs ferruginous. Wings hyaline, ferruginous at the base, brown with violet reflections in their external two-thirds. This pretty species much resembles *E. esuriens* and allied species, but is easily distinguished by the strongly smoky wings, which are somewhat violaceous." *E. elegans* has never been properly recognised. If it is indeed structurally like *E. campaniformis*, it should represent a quite peculiar colour phase of that species. It is, however, possibly a variety of *E. lepeleterii.*

Eumenes campaniformis var. *formosus*, H. de Saussure.

Eumenes formosa, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 55 (no sex).

Eumenes lepeleterii var. *formosa*, H. de Saussure, Et. Fam. Vesp., iii, 1856, p. 131.

Eumenes caffer, typical form, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 72 (♀♂) (not of Linnaeus).

This was quite briefly defined by H. de Saussure as follows: "Black, ornamented with yellow. Abdomen bearing a black cross. Size of *E. campaniformis*, and quite closely allied to that species, from which it differs in the following characters: Antennae brown. Tegulae ferruginous, with a yellow spot. Petiole [=first abdominal segment] swollen from the middle on, thence uniformly wide in its entire posterior part, ferruginous, with two yellow spots at the apex, between which one sees a black spot shaped like a rounded lozenge, and with two yellow dots in its middle. Abdomen perfectly oval, yellow with a black cross. Legs ferruginous; tibiae yellow. Pleura yellow, with an oblique, black band. The remainder as in *campaniformis*." The type came from the Congo, and is at the British Musuem.

It is the most common colour phase of *E. campaniformis* in the southern half of the African continent, and as such deserves a more complete description.

Black, abundantly marked with bright yellow as follows: clypeus entirely (in both sexes), a tinge on the inner half of mandibles, lower half of face (including most of the sinus of the eyes), broad outer orbits, pronotum, scutellum and postscutellum (except along the anterior and posterior margins), major part of propodeum (divided by a narrow, median, black stripe), mesopleura, a spot on the tegulae posteriorly, two spots (widely separated) before the apex of the first abdominal tergite, the second tergite except for a wide, black cross, the posterior half of the second sternite, most of the remaining segments of the abdomen (the yellow more or less distinctly interrupted on the tergites by the continuation of the black cross of the second tergite), the under side of the fore femora and the under side of all the tibiae. The following parts are ferruginous-red: most of the mandibles; the antennae (brownish in the apical half on the upper side); part of tegulae; mesosternum; first abdominal segment (except for a short, black base and a black, preapical spot between the yellow spots, either lozenge-shaped or extending laterally into a cross band); the basal half of the second sternite; the extreme base and sides of the second tergite; and the legs (except where yellow). Wings subhyaline, amber-yellowish in the subcostal and more ferruginous in the costal cell; a faint, somewhat purplish spot in the radial cell. Both sexes are practically coloured alike.

Length (h.+th.+t. 1+2): ♀, 14 to 18·5 mm.; ♂, 13 to 16·5 mm.

The similarity in coloration of *E. campaniformis* var. *formosus* and the typical colour phase of *E. lepeleterii* is most deceiving, and since both often occur in the same district, they are generally confused in collections. Probably most of the South African records of *E. lepeleterii* published in the literature were based upon specimens of *formosus*. In the male, the distinction is relatively easy owing to the different shape of the antennal hook. In the females, however, one must rely upon the shape of the first abdominal segment as seen from above.

Southern Rhodesia: Sebakwe, 1 ♀, November 1910 (D. Dods), and Bindura, 1 ♂ (D. Coghill), S.A. Mus.; Matoppos, 1 ♀, May 26, 1912 (G. Arnold), Rhodesia Mus.; Lomagundi, 1 ♀ (C. W. Howard), U.S. Nat. Mus.

Orange Free State: Vredefort, 1 ♀, S.A. Mus.

Natal: Mfongosi, several ♀ and ♂, March 1914, and March and April 1916 (W. E. Jones), S.A. Mus.

The var. *formosus* is common on the Lower Congo, but I have not yet seen it from Katanga.

A female from Abyssinia (Magretti Coll.), at the United States National Museum, differs from the above description of *formosus* in having a comma-shaped yellow mark on each side of the anterior half of the mesonotum, the two marks being separated by a ferruginous spot. Perhaps it represents a peculiar colour phase of north-eastern Africa.

Eumenes campaniformis var. *rhodesiensis*, new variety.

Female.—An extreme xanthic colour phase of *E. campaniformis*. Head, thorax, legs, and wings are coloured as in the var. *formosus*, de Saussure; but there is a narrow, yellow line on each side of the mesonotum, along the margin, just before the tegulae. The abdomen is almost completely bright yellow: the first segment is black at the extreme base, somewhat more extensively on the sternite, and the tergite has a black, elongate spot over the middle of the apical, dilated portion; the remainder of the first segment is ferruginous-red except for a long, yellow spot on each side of the black mark in the apical, dilated portion; these yellow spots are much widened laterally in their posterior half. The second tergite is yellow, with a median, longitudinal, more or less spear-shaped, black mark, forming in the basal third a stripe which is angularly dilated in the middle and tapers out in a long point posteriorly.

Length (h.+th.+t. 1+2): 16 mm.

Southern Rhodesia: Que Que (Bultitude), 1 ♀ (holotype), S.A. Mus.

Eumenes campaniformis var. *marshalli*, new variety.

Eumenes caffer var. *esuriens*, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 73 (♀♂) (not of Fabricius).

This colour phase has been fully described in the paper quoted. It differs mainly from the var. *formosus* in lacking the large, triangular, yellow spots at the base of the second tergite, so that the abdomen is not yellow with a black cross; the second tergite is more or less extensively ferruginous over the basal third. Frequently too the yellow markings are somewhat reduced on thorax or abdomen, but they are always much more abundant than in the var. *rendalli*, as there is a yellow, broadly interrupted band at the apex of the second and succeeding tergites.

Length (h.+th.+t. 1+2): ♀, 16 mm.; ♂, 14 mm.

Belgian Congo: Stanleyville, 1♀ (paratype), April 1915 (J. Bequaert); Coquilhatville, 1 ♂ (paratype), June 24, 1924 (Maurice Bequaert); Bogoro, 1 ♂ (paratype), July 10, 1914 (J. Bequaert).

Southern Rhodesia: Lomagundi, 1 ♂ (paratype), November 1909 (C. W. Howard), U.S. Nat. Mus.; Salisbury, 1 ♀ (holotype) and 1 ♂, April 1900 (allotype) (G. A. K. Marshall); in coll. Brauns, Salisbury, 1 ♀ (paratype), May 1914 (D. Dodds), S.A. Mus.

I have received a pair from Dr. Brauns marked as types of "*E. lepeleterii* var. *marshalli*, A. v. Schulthess," but, so far as I can discover, this name has not been published. The shape of the first abdominal segment, as well as of the male antennal hook, leave no doubt to my mind that these specimens should be regarded as a variety of *E. campaniformis* and not of *E. lepeleterii.*

I suspect that the specimens from Katanga (between Mufungwa and Kayumbe; between Shawa and Kundiganga; and Kabinda), recorded under the name *E. maxillosus* var. *pulcherrimus* by Schouteden (Rev. Zool. Afric., vi, 1919, p. 174), are *E. campaniformis* var. *marshalli.*

The var. *marshalli* is quite similar in livery to the wasp described by A. v. Schulthess under the name *Eumenes maxillosus* var. *pulcherrimus.* Since, however, I am as yet undecided as to the exact status of *pulcherrimus*, the use of that name for the Central African form here called *marshalli* might be the source of much confusion.

Eumenes campaniformis (?) var. *pulcherrimus*, A. v. Schulthess.

Eumenes maxillosus var. *pulcherrimus*, A. v. Schulthess, Societas Entomol., xxv, 1910, p. 17 (♀). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 59 and 281.

Eumenes janseii, P. Cameron, Ann. Transvaal Mus., ii, 3, 1910, p. 157 (♀).

This form was originally described upon eight females from "East Africa from the equator to Natal." In the material before me there are three specimens which were identified as "*E. maxillosus pulcherrimus*" by Dr. A. v. Schulthess and bear a "type" label. Of these, one female of Algoa Bay (H. Brauns) and one female of Roode Poort, near Johannesburg (G. Kobrow), are in Dr. H. Brauns' collection; while one male of Estcourt, Natal (E. Haviland), was received from the South African Museum. Obviously, however, these three specimens were not before the author when he drew up his description, and are therefore not true types. According to the labels they were identified in 1911. Moreover, A. v. Schulthess states in the original account that the male was unknown (and I am not aware that it was ever described in print); neither does he include the Transvaal and Cape Province in the distribution. I must emphasise this, because an examination of the real types, used for the original description, might well lead to different conclusions.

The problem is further complicated through the fact that these three specimens, although practically coloured alike, appear to belong to two species upon morphological grounds.

The male of Estcourt and the female of Roode Poort are structurally like *E. campaniformis*, and I have little doubt that they belong to that species. They have the same shape of the first abdominal segment, head, thorax, and hind tarsi in the female. Whereas the antennal hook and genitalia of the male are those of *E. campaniformis*, and not of *E. maxillosus*.

The coloration of these two specimens is as follows:—

Female.—Black, extensively marked with ferruginous and bright yellow. Mandibles (except the black tip), basal half and under side of antennae, tegulae, first abdominal segment (except for the black base, continuing as a median stripe ventrally, and a black, mushroom-shaped spot at apex of tergite), basal third of second tergite (except for the black neck), the sides of second sternite quite broadly (the black forming a large T), the tip of abdomen diffusely, and most of the legs, bright ferruginous-red. The following parts are yellow: clypeus (except for narrow, black margins along inner orbits); the lower half of the front (except for black spots above the base of antennae); outer orbits narrowly above; anterior half of pronotum; a large spot in upper part of mesopleura extending below the suture between the two plates; a broad, transverse band on scutellum; posterior half of postscutellum; a large, elongate spot on each side of propodeum; a preapical spot on each side of first tergite; broad apical bands on tergites 2, 3, and 4, very widely interrupted in the middle; indefinite spots on fifth tergite; an apical band on second sternite; and outer side of all tibiae and of fore femora. Wings subhyaline, with amber-yellow tinge, especially in anterior half; the radial cell somewhat cloudy and purplish.

Length (h.+th.+t. 1+2): 17·5 mm.

Male.—Almost exactly like the female; the yellow markings somewhat more pronounced behind the fourth abdominal segment.

Length (h.+th.+t. 1+2): 17 mm.

I have seen three other females from Natal (Estcourt and Clairmont), which agree in every structural detail with the specimen from Roode

Poort and are coloured exactly like it. I have no doubt that all these five specimens represent a colour phase of *E. campaniformis*, which differs only from the var. *marshalli* in the yellow markings being more extensive on the abdomen. If, as I surmise, A. v. Schulthess' original types of East Africa belonged to the same colour phase of *E. campaniformis* as here described, it is quite probable that *marshalli* will be regarded as a synonym of *pulcherrimus*.

I should have felt no hesitation in doing so, were it not for the female from Algoa Bay. That specimen, although coloured nearly exactly like the one from Roode Poort described above, has a quite different aspect. The head is about as high as broad; the posterior ocelli are nearly as far from the inner orbits as from each other; the thorax is rather short and broad; the first tergite, though in outline like that of *E. campaniformis*, is relatively broader behind; the second sternite is normally convex; the hind tarsi are but little longer than the hind femur and trochanter; the sides of the propodeum are completely rounded off. Length (h.+th.+t. 1+2): 20 mm. I feel reasonably certain that this specimen is not a colour phase of *E. maxillosus*. Quite possibly it is a mere robust variation of *E. campaniformis*. On the other hand, it reminds one a great deal of *E. caffer*, and it is, of course, not impossible that *E. caffer* presents a colour phase of the *pulcherrimus* pattern. The discovery of the corresponding male alone can solve the problem. I may also call attention to the fact that no colour phase of genuine *E. campaniformis* has as yet been recorded from the Cape Province.

In the South African Museum there is a female, unfortunately without locality, which I regard as belonging to the same form as the female from Algoa Bay here discussed.

Eumenes campaniformis var. *rendalli*, Bingham.

Eumenes rendalli, C. T. Bingham, Ann. Mag. Nat. Hist., (7), x, 1902, p. 220 (♀; not the ♂). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 283.

Eumenes caffer var. *gracilis*, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 72 (♀♂). Not of de Saussure.

An examination of the types of *E. rendalli*, at the British Museum, shows that the female represents a peculiar colour phase of *E. campaniformis*; while the male has all the structural characters (shape of first segment and especially of antennal hook) of *E. lepeleterii* and the coloration of the var. *concinnus*, H. de Saussure, of that species. The name *rendalli* is herewith restricted to the colour phase of *campaniformis* represented by the female type.

The following description is based upon the female type: Head and thorax, including propodeum, extensively ferruginous; the vertex and hind part of the temples, the apical half of the flagellum above, small spots on pronotum, mesonotum, the sutures of the thorax, and a median band on the propodeum, black. Legs rufous-red. First abdominal segment ferruginous, except for a short, black base and a broad, irregular, black band in the widened part, before the apex; second tergite black, with ferruginous basal third and indefinite ferruginous spots on the sides near the apical margin; the succeeding tergites black, with dirty yellow or orange apical margins; the abdominal sternites are almost entirely ferruginous. Wings subhyaline with amber-yellow tinge; the radial cell with a brown, purplish spot covering the apical two-thirds. The face (including clypeus) and outer orbits were evidently yellow in life, but they have turned orange. Length (h.+th.+t. 1+2): 17 mm.

A male from Mlanje, Nyasaland, at the British Museum, agrees in coloration with the type, and, since it possesses the characteristic antennal hook of *E. campaniformis*, I regard it as the true male of the var. *rendalli*.

I refer to the var. *rendalli* specimens from the following localities:—

Belgian Congo: Boma, June 15, 1915, 1 ♀ and 1 ♂ (J. Bequaert); Zambi, 1 ♂, June 22, 1915 (J. Bequaert).

Southern Rhodesia: Sebakwe, 1 ♀, November 1901 (D. Dods), S.A. Mus.

Nyasaland: Fort Johnston, several ♀ (including the holotype) (P. Rendall); Chitala Stream, 10 miles west of Domira Bay, several ♀, October 22-28, 1910 (S. A. Neave); Mlanje, 1 ♂ (allotype) (S. A. Neave) —all at the Brit. Mus.

A male from Walikale, Belgian Congo, agrees on the whole with *rendalli*, but has the pronotum quite broadly bright yellow. It may be regarded as a transition to the var. *marshalli*, from which it differs, however, in having no other yellow markings on the thorax and in the absence of yellow at the apex of the second tergite.

Eumenes campaniformis var. *pseudodyscherus*, new variety.

Eumenes caffer var. *dyscherus*, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 74 (♂). Not *Eumenes dyschera*, H. de Saussure, 1852.

Eumenes dyschera was described by H. de Saussure (Et. Fam. Vesp., i, 1852, p. 50) as of tropical Africa. In 1918, I believed to have recognised it in a melanistic form of *E. campaniformis*, of the Congo forest. An examination of de Saussure's type, at the British Museum, has, however, shown that the true *E. dyscherus* is South American and not African. In a recent note (Bull. Brooklyn Ent. Soc., xx, 1925) I regard *E. chalicodomae*, H. de Saussure, *E. centralis*, P. Cameron, and *E. magnus*, Brèthes, as synonyms of *E. dyscherus*.

The melanistic Congo colour phase of *E. campaniformis* I have named var. *pseudodyscherus*. It is mostly black. Mandibles, under side of antennae, tegulae, propodeum, sometimes also pronotum and mesopleura, first abdominal segment, sometimes base of second, and legs are more or less spotted with ferruginous. Clypeus entirely (in both sexes), a spot between the antennae, inner orbits below the sinus of eyes, a narrow line along outer orbits, and spots on the outer side of the tibiae, yellow. In the female, the anterior margin of the pronotum is also yellowish. The wings are as in typical *campaniformis*, subhyaline with amber-yellow tinge and a brown, purplish spot in the radial cell.

Length (h.+th.+t. 1+2) : ♀, 16 mm. ; ♂, 15 mm.

Belgian Congo : Stanleyville, 1 ♂ (holotype), April 1915 (J. Bequaert) ; Walikale, 1 ♀ (allotype) (J. Bequaert).

Eumenes dyschera, G. K. Marshall, Trans. Ent. Soc. London, 1902, pp. 525, 570, and 572, pl. xxi, figs. 16 (♂) and 17 (♀), and pl. xxii, fig. 14 (♂), of Salisbury, Southern Rhodesia, is neither *E. campaniformis* var. *pseudodyscherus* (which has clear, slightly yellowish wings) nor *E. dyschera*, H. de Saussure, but *E. lepeleterii* var. *hottentottus*, H. de Saussure.

Eumenes lepeleterii, H. de Saussure.

(Text-figure 12.)

The morphological characters of this species have been described and illustrated in Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 74, figs. 57–62. In the female, the head as seen in front is distinctly broader than high ; the sides of the propodeum are completely rounded off between the dorsal and the ventral area ; the first abdominal segment is slender, as long as or slightly longer than the thorax ; seen from above it very gradually widens from base to apex, and is about four times as long as its greatest width ; second sternite not or scarcely depressed in the centre ; hind tarsi about as long as hind femur and trochanter. In the male, the first segment of the abdomen is, as a rule, more slender than in the female; the terminal hook of the antennae is quite long and slender, very gradually tapering from the base to the sharp, recurved apex, which rests in a pit on the under side and at about the middle of the tenth antennal segment.

E. lepeleterii is distributed over most of the Ethiopian and Malagasy regions, a large part of Arabia, Syria, and Egypt. It has also been reported from Cyprus. In South Africa it appears to extend much beyond the limits which I had traced on the map in 1918. It is there generally represented by the colour phases *concinnus*, de Saussure, and *hottentottus*, de Saussure.

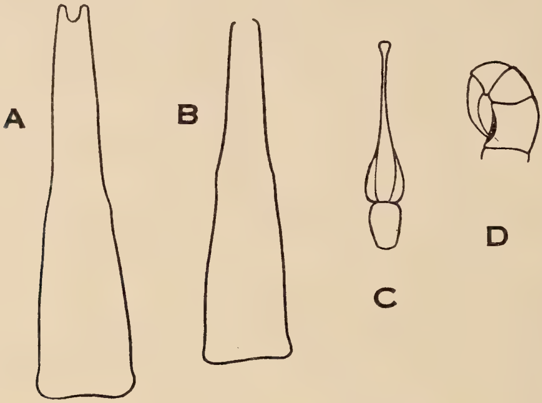

FIG. 12.—*Eumenes lepeleterii*, H. de Saussure. *A*, first tergite of female from above; *B*, first tergite of male from above; *C*, penis from above; *D*, terminal segments of male antenna.

Since I have not yet been able to study all the described colour variations, I am unable to improve much upon my former treatment. *E. alluaudi*, J. Pérez, is a distinct species, allied not to *E. lepeleterii*, but to *E. maxillosus*.

Key to Colour Phases of E. lepeleterii.

1. Thorax and abdomen black or black and ferruginous-red, almost without yellow or ivory-white markings 2
   Abdomen or thorax, or both, extensively marked with yellow or ivory-white. Wings subhyaline, more or less tinged with amber-yellow 4
2. Wings much infuscated, with purplish reflections. Body almost wholly black, slightly ferruginous on parts of head, thorax, legs, and first segment of abdomen. Head with a few yellowish spots.
   var. *hottentottus*, H. de Saussure
   Wings subhyaline, slightly tinged with amber-yellow 3
3. Body almost wholly black, slightly ferruginous on parts of head, thorax, legs,

and first abdominal tergite, and also along the apical margins of the last tergites. Head and thorax with a few ivory-white spots.
var. *guerini*, H. de Saussure

Body extensively ferruginous-red, with black markings; as a rule a black cross over the second abdominal tergite. Ivory-white markings much reduced, generally restricted to the clypeus and spots on the head.
var. *concinnus*, H. de Saussure

4. Yellowish markings abundant on head, thorax, and abdomen; the second and succeeding tergites of the abdomen mostly yellow, with a distinct black or ferruginous cross, the branches of which run over the second tergite . 5

Yellowish markings much more reduced on abdomen, with a few spots only on the first or first and second tergites 6

5. Mostly black and yellow; the ferruginous colour much reduced in extent; the cross of the abdomen black . . . . typical *lepeleterii*

Black colour almost entirely replaced by ferruginous-red; the cross of the abdomen ferruginous . . . . var. *asinus*, H. de Saussure

6. Form of Madagascar. Mostly black with rufous tinges. Postscutellum and first and second abdominal tergites with a narrow, ivory-white fascia.
var. *pensilis*, H. de Saussure

Forms of the African continent 7

7. Head and thorax abundantly marked with yellow; two apical spots on first tergite and the outer side of the legs yellow; ferruginous colour much reduced . . . . . . var. *tessmanni*, A. v. Schulthess

Black with a few brownish-red tinges on head, thorax, legs, the under side of the abdomen, and the last abdominal tergites. Inner orbits, a narrow fascia on the postscutellum, two spots before the apex of first tergite, and a narrow apical band on first and second tergites, pale yellow.
var. *stuhlmanni*, A. v. Schulthess

Eumenes lepeleterii, typical colour phase.

Eumenes lepeleterii, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 45, pl. x, fig. 3 (♀) (the figure is misleading and does not agree with the description). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 77 and 276 (♀♂).

Eumenes granti, W. F. Kirby, Bull. Liverpool Mus., iii, 1900, p. 18 (♀).

Eumenes meruensis, P. Cameron, Wiss. Ergebn. Schwed. Zool. Exp. Kilimandjaro, ii, 8, 6, 1910, pp. 175 and 176 (♀).

The typical colour phase of the species was originally described from the Senegal. It has been very often recorded in the literature, but I suspect that in many cases it was confused with *E. campaniformis* var. *formosus*, H. de Saussure, or *E. melanosoma* var. *affinis*, A. v. Schulthess, of which it is a perfect mimic. At any rate, it is rather strange that I have not yet seen a South African specimen of true *lepeleterii*. It occurs, however, on the Lower Congo (Boma, Matadi, and Noki). I have examined, at the United States National

Museum, a female from the Jombene Hills, Kenya Colony (Chanler-Hohnel Expedition), which agrees still better with the original description than the Congo specimens. Schouteden (Rev. Zool. Afric., vi, 1919, p. 174) has listed the typical form from Dungu (north-eastern Congo) and Bunkeya (Katanga), but I have not seen these specimens. The distribution cannot be correctly stated at present.

I am using the original spelling of the name, which has also been variously written *lepeletieri* or *lepelletieri*.

Eumenes lepeleterii var. *asinus*, H. de Saussure.

Eumenes asina, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 59, pl. xi, fig. 1 (♀) (Senegal).

Eumenes lepeleterii var. *asinus*, A. v. Schulthess, Societas Entomol., xxv, 1910, p. 24. J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 77 and 277.

I am merely following A. v. Schulthess, who states to have seen the type (at the Paris Museum), in referring *E. asina* as a colour phase to *lepeleterii*. I have never seen it, and, so far as I know, no additional specimens have been collected. H. de Saussure's figure would rather give one the impression of a form of *E. campaniformis*, in the shape of the first abdominal segment.

Eumenes lepeleterii var. *pensilis*, H. de Saussure.

Eumenes pensilis, H. de Saussure, in Grandidier, Hist. Phys. Nat. Madagascar, xx, pt. 1, Hym., 1890, p. 155, pl. iv, fig. 10, and pl. xvii, fig. 7 (♀♂).

Eumenes lepeleterii var. *pensilis*, A. v. Schulthess, Societas Entomol., xxv, 1910, p. 17 (♀♂). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 77 and 278.

Known from Madagascar only. It appears to be quite close to the var. *stuhlmanni*, and it is not clear how the two might be distinguished. I have not seen it.

Eumenes lepeleterii var. *stuhlmanni*, A. v. Schulthess.

Eumenes lepeleterii var. *stuhlmanni*, A. v. Schulthess, Societas Entomol., xxv, 1910, p. 18 (♀). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 77 and 278.

This was originally described from Tanganyika Territory (German East Africa), without more definite locality, and I have not seen specimens that agree quite with the description.

Eumenes lepeleterii var. *tessmanni*, A. v. Schulthess.

Eumenes lepeleterii var. *tessmanni*, A. v. Schulthess, Societas Entomol., xxv, 1910, p. 18 (♀♂). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 77 and 278.

Eumenes cameruna, "F. Kohl," A. v. Schulthess, Mitt. Zool. Mus. Berlin, vi, 3, 1913, p. 342 (as a synonym).

Described from Spanish Guinea, Benito. I have seen male and female from Lolodorf, Cameroon: in these specimens there are orange-yellow spots in the apical corners of the posterior sternites of the abdomen, which are not mentioned in the original description. The var. *tessmanni* mimics *E. melanosoma* var. *aethiopicus*.

Eumenes lepeleterii var. *concinnus*, H. de Saussure.

Eumenes concinnus, H. de Saussure, Et. Fam. Vesp., iii, 1856, p. 144 (♂).

Eumenes lepeleterii var. *concinnus*, A. v. Schulthess, Societas Entomol., xxv, 1910, p. 17 (♀♂). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 77 and 277.

Eumenes sanguinolenta, Gerstaecker, Monatsb. Preuss. Ak. Wiss. Berlin, 1857, p. 463 (♂).

Eumenes spilocera, P. Cameron, Ann. Transvaal Mus., ii, 3, 1910, pp. 159 (♀) and 160.

Since this is a common South African wasp, it may be more fully described.

Female.—Extensively ferruginous-red; it might well be described as a typical *lepeleterii* in which the yellow has been replaced by ferruginous. The black markings are as follows: upper half of front; vertex; temples; mesonotum; mesopleura (except for a rufous spot in the upper half); metapleura; margins of scutellum and postscutellum; a median stripe on the propodeum; extreme base, under side, and an elongate, spear-shaped spot on the posterior dorsal half of the first abdominal segment; an elongate spot on the second sternite; a cross over the second tergite, the base of the succeeding segments, and the under side of the hind femora in part. The yellowish colour is usually confined to the narrow outer orbits (often orange) and the lateral ridges which connect scutellum and postscutellum with the base of the wing. Occasionally the lower inner orbits (from the clypeus to the bottom of the ocular sinus), the very centre of the clypeus, spots between the antennae, the extreme apical corners of the first tergite, and the base of the fore tibiae may be yellowish. The wings are intensively amber-yellow, darkened and more purplish toward the tip.

Male.—Agrees quite well with the female. Generally the clypeus is entirely pale yellow, but I have also seen males in which it is ferruginous (perhaps discoloured artificially). Often too there is a short, transverse, pale yellow line in the centre of the pronotum, and this may be faintly indicated even in certain females.

Length (h.+th.+t. 1+2) : ♀, 16·5 to 19 mm. ; ♂, 12 to 16·5 mm.

Originally described form Nubia, it occurs throughout East and South Africa. I have also a pair from Fort Crampel, in the Ubangi Territory of French Equatorial Africa, which are somewhat more extensively black than usual, but still have subhyaline, amber-yellow wings.

Katanga : Lubumbashi, several ♂ and ♀, April, May, June, and December 1920, and January 1921 (Mich. Bequaert). Apparently a common wasp in that part of the Belgian Congo. Schouteden (Rev. Zool. Afric., vi, 1919, p. 175) lists it from several additional localities, but whether the specimen he records from Boma was correctly named remains to be seen.

Southern Rhodesia : Lonely Mine, 1 ♀, June 29, 1913, and April 11, 1914 (H. Swale) ; Salisbury, June 1913, 3 ♂, S.A. Mus.

Transvaal : Kaapmuiden, 2 ♂ and 1 ♀, October and November 1918 (R. W. E. Tucker), S.A. Mus.

Natal : Mfongosi, 6 ♂, March 1917, and April and May 1916 (W. E. Jones) ; Durban, 1 ♀ (W. Haygarth) ; Stella Bush, 1 ♀ (Marley), S.A. Mus.

Cape Province : Dunbrody, 1 ♀ and 1 ♂ (J. O'Neil) ; Mossel Bay 1 ♀ (Overbeck) ; Hex River, 1 ♂, S.A. Mus. ; Ceres and Mossel Bay, several specimens (R. E. Turner), Brit. Mus. ; Willowmore, 1 ♀, April 1, 1906 (H. Brauns).

While the female of Kaapmuiden agrees with the var. *concinnus* in every respect, the two males of the same locality differ conspicuously in having fairly large, pale yellow spots near the apex of the first tergite, and on each side of the apex of the second tergite a transverse, pale yellow spot. I have seen similar males from the Semliki Valley, north-eastern Congo, and Lubumbashi, Katanga. At one time I was inclined to refer them to the var. *stuhlmanni.* They possibly represent a distinct colour phase or perhaps are transitional between var. *concinnus* and var. *stuhlmanni.* I do not wish to name them for the present, since they might be *E. lepeleterii* var. *thoracicus,* Schouteden (Rev. Zool. Afric., vi, 1919, p. 175), mentioned, but not described, from Katanga (between Kambove and Bunkeya—S. A. Neave).

Eumenes lepeleterii var. *hottentottus*, H. de Saussure.

Eumenes hottentotta, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 63 (♀).

Eumenes lepeleterii var. *hottentottus*, A. v. Schulthess, Deutsche Entom. Zeitschr., 1914, p. 291 (♀♂). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 77, 78, and 278 (♀♂).

Eumenes dyscheroides, Gribodo, Mem. Accad. Sc. Bologna, Sc. Nat., (5), v, 2, 1895, p. 93 (♂).

A common form throughout South Africa. It extends, however, as far as Cameroon (Batanga) and the northern Belgian Congo (Boma, Lubutu, Coquilhatville, Stanleyville). In coloration it resembles the typical form of *E. maxillosus* so exactly that much caution is needed to separate them. The extent of ferruginous is somewhat variable, but usually slight, and it is readily distinguished from the var. *concinnus* by the black, purplish wings.

Katanga: Lubumbashi, 1 ♂ and 1 ♀, July and November 1920; and Panda River, 1 ♀, October 1920 (Mich. Bequaert).

Portuguese East Africa: Lourenco Marques, several ♀ and ♂ (H. Junod).

Natal: Mfongosi, 1 ♂, March 1917 (W. E. Jones), S.A. Mus.; Durban, 1 ♀.

Cape Province: Dunbrody, 1 ♂ and 1 ♀, January 1912 (J. O'Neil); Henkries, Bushmanland, 2 ♀ and 1 ♂, October 1911 (Lightfoot); Salem, 1 ♂, S.A. Mus.

Eumenes lepeleterii var. *guerini*, H. de Saussure.

Eumenes guerini, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 62 (♀).

Eumenes lepeleterii var. *guerini*, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 77 and 277.

Eumenes sakalava, H. de Saussure, Abh. Senckenberg. Naturf. Ges., xxvi, 2, 1900, p. 235 (♀♂).

Known from Madagascar only. I have not seen it. It seems to differ from the var. *hottentottus* mainly in the more extensive ferruginous markings and the subhyaline, amber-yellow wings. It is by no means clear how it may be differentiated from certain specimens of the var. *concinnus*.

Eumenes maxillosus (de Geer).

(Text-figure 13.)

This is the largest of the African *Eumenes*, but it varies much in size. Structurally it is related to both *E. campaniformis* and *E.*

lepeleterii, of which it often assumes the several colour patterns. In the female the head as seen in front is scarcely broader than high; the eyes are slightly farther apart at the clypeus than on the vertex, and the posterior ocelli are about twice as far apart as from the inner orbits; the sides of the propodeum are somewhat angular or even faintly ridged between the dorsal and the ventral areas, especially in the lower half; the first abdominal segment is rather stout, distinctly shorter than the thorax; seen from above it is distinctly divided by a slight contraction into a basal, stalk-like and a much broader, apical portion; the hind portion widens rather conspicuously at the apex, where its width is variable, usually about one-third of the total length of the segment; the second sternite is more or less depressed in the centre, often quite deeply so, especially in large specimens; sometimes, however, the sternite is just barely flattened, and this is the usual condition in the var. *fenestralis*, which is the smallest of all the colour phases of *maxillosus*; the anterior margin of the clypeus is, as a rule, quite straight or faintly curved, either inwardly or outwardly; hind tarsi relatively slender, much longer than hind femur and trochanter. Almost all these characters hold in the male, which, in addition, may be recognised by the peculiar hook of the antennae: it is very long and thick, curved and somewhat contracted beyond the base, the terminal half distinctly swollen in profile and widened seen from above; it ends in a sharp, strongly bent apex, which reaches the base of the tenth antennal segment; it rests there in a broad and deep excavation at the under side of the segment; the eyes are about equally far

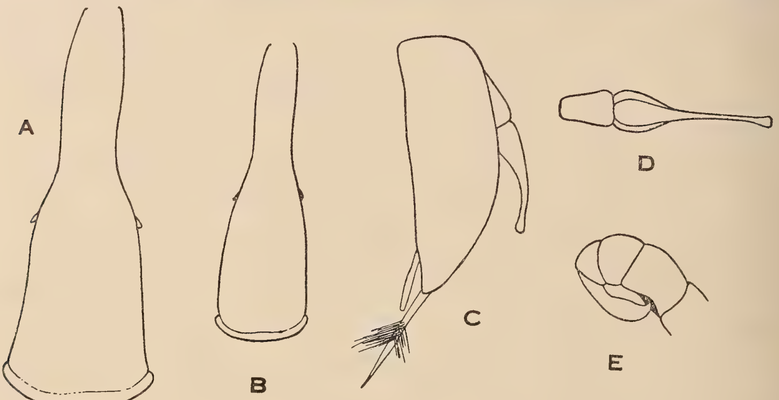

Fig. 13.—*Eumenes maxillosus* (de Geer). *A*, first tergite of female from above; *B*, first tergite of male from above; *C*, male genitalia in profile, outer view; *D*, penis from above; *E*, terminal segments of male antenna.

apart on the vertex as at the clypeus ; the posterior ocelli are quite close to the inner orbits, being more than twice as far apart ; the hind (and also middle) tarsi are still more strikingly slender than in the female.

I have endeavoured to discover additional characters in the male genitalia of *E. campaniformis*, *E. lepeleterii*, and *E. maxillosus*, but the differences appear to be so slight that they are of little specific value. I have figured the penis of all three species.

The structural characters of *E. maxillosus* have been illustrated in Bull. Amer. Mus. Nat. Hist., xxxix, 1918, p. 57, figs. 39, 40. It should be noted, however, that the female antenna is there drawn as 13-segmented, which is an obvious error ; it possesses 12 segments in this, as in all other *Eumenes* known to me.

The distribution of *E. maxillosus* is similar to that of *E. campaniformis*, though more extensive, since it includes the whole of Africa (except Morocco, Algeria, and Tunis), Madagascar, Arabia, Syria, Mesopotamia, Persia, the Oriental region as far as southern China, the Malay Archipelago, the Papuan region, and the north-eastern half of Australia.

Over this vast area *E. maxillosus* has produced more different colour phases than any other species of *Eumenes*. Every one of these colour variations has a much more restricted range than that of the morphological species as a whole ; yet generally two or more of them occur together in the same region, so that I am unable to regard them as geographically segregated races. Neither do they, as a rule, exhibit gradual passage into one another at the limits of their respective ranges ; such geographical intergradation is, I understand, the essential criterion of the subspecific concept as used by students of vertebrates. Nevertheless, as these several colour phases are morphologically identical, it would, in my opinion, obscure the whole matter to regard them individually as species, merely because they do not fit the current conception of subspecies or races. There can be no doubt that they are genetically quite closely related. There are many other interesting problems suggested by the study of variation in this species. I have briefly discussed them before,* and I shall not take up the matter again for the present.

Since publishing my account of *E. maxillosus* in 1918, I have examined much additional material, so that I am able to correct and extend my conclusions in many particulars. The subjoined key of the colour phases should replace my former attempt in that direction. The main difference lies in the recognition by name of a number of additional colour variations. As I have shown in the discussion of *E. campaniformis*, the var. *pulcherrimus*, A. v. Schulthess, does not belong to *E. maxillosus*, but (as far as East Africa is concerned) to *E. campaniformis*. The distribution of the several extra-African variations may be succinctly indicated.

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* See Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 59–65. Also J. Bequaert, Enkele beschouwingen over kleuren en kleurgroepen by Plooivleugelige Wespen, Natuurwetensch. Tijdschr. Antwerpen, v, 1923, pp. 16–27 (with corrected maps).

1. Var. *circinalis*, Fabricius (*Eumenes circinalis*, Fabricius, Syst. Piezat., 1804, p. 286; *Eumenes latreillei butonensis*, W. A. Schulz, Berlin Ent. Zeitschr., xlix, (1904) 1905, p. 218, ♀). India, Siam, Indo-China, Sumatra, Java, Borneo, and the Molucca Islands.

2. Var. *conicus* (Fabricius) (*Vespa conica*, Fabricius, Syst. Entom., 1775, p. 372). Oriental region, from India to southern China.

3. Var. *fulvipennis*, F. Smith (*Eumenes fulvipennis*, F. Smith, Cat. Hym. Brit. Mus., v, 1857, p. 24, ♀♂). Celebes and Philippine Islands. One finds all intergrades between this and the var. *circinalis*.

4. Var. *latreillei*, H. de Saussure (*Eumenes latreillei*, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 51, pl. x, fig. 5, ♀; *Eumenes latreillei petiolaris*, W. A. Schulz, Berlin. Ent. Zeitschr., xlix, (1904) 1905, p. 217, ♀). North-eastern Australia to New South Wales, New Guinea, and Solomon Islands. I have seen a "type" of *petiolaris*, Schulz, at the British Museum.

5. Var. *nigritarsis*, G. Meade Waldo (*Eumenes nigritarsis*, G. Meade Waldo, Ann. Mag. Nat. Hist., (8), v, 1910, p. 43, ♂). Region of Port Darwin, northern Australia. I have examined the type at the British Museum. It differs mainly from the var. *latreillei* in the markings of the thorax being bright yellow and not orange. All the structural characters of *E. maxillosus* are present.

6. Var. *pyriformis* (Fabricius) (*Vespa pyriformis*, Fabricius, Syst. Entom., 1775, p. 371; *Vespa petiolata*, Fabricius, Spec. Insect., i, 1781, p. 467). Oriental region, from India to southern China. W. A. Schulz, who examined the type of *Vespa pyriformis* at the Copenhagen Museum, concluded that it was the same as *Vespa petiolata*, Fabricius, as was suspected by de Saussure (Et. Fam. Vesp., iii, 1856, p. 133). *Vespa petiolata*, Fabricius, is of later date, and, moreover, is preoccupied by *Vespa petiolata*, de Geer, 1778.

7. Var. *xanthurus*, H. de Saussure (*Eumenes xanthura*, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 46, pl. x, fig. 4, ♀). India, Indo-China, Malay Archipelago.

Eumenes insularis, F. Smith, Cat. Hym. Brit. Mus., v, 1857, p. 27,

♀♂, of the Solomon Islands or New Hebrides, agrees in coloration with the var. *circinalis*. An examination of the types, however, shows that it is structurally distinct from *E. maxillosus*. The same is true for *Eumenes philantes*, H. de Saussure, and *Eumenes fluctuans*, H. de Saussure, of which I have seen the types at the British Museum, and also of *Eumenes bicinctus*, H. de Saussure. *E. philantes*, *E. bicinctus*, and *E. maxillosus* var. *latreillei* mimic one another in a most deceiving fashion, presenting, together with many other Hymenoptera of that region, a distinctively Australian and Papuan colour pattern.

Key to Colour Phases of E. maxillosus.

1. Thorax and abdomen black or black and ferruginous, without yellow or orange-yellow markings 2
   Thorax, or abdomen, or both, more or less marked with yellow or orange-yellow 9
2. Wings entirely black, with purple reflections. Body black, more or less blotched with ferruginous on head, thorax, legs, and abdomen 3
   Wings not uniformly purplish black 4
3. Rather extensively ferruginous . . . . var. *savignyi*, Guérin
   But little ferruginous, often almost pure black . . typical *maxillosus*
4. Thorax and abdomen almost pure black, with very few, dull ferruginous blotches 5
   Thorax or abdomen, or both, extensively and more brightly ferruginous . 6
5. Wings dark brown or black in their basal half, hyaline and somewhat milky in their apical half . . . . . . var. *reginus*, H. de Saussure
   Wings suffused all over with amber-yellow, somewhat darker or brownish toward the base . . . . . . var. *fulvipennis*, F. Smith
6. Wings hyaline with amber-yellow tinge in their basal half; their apical half bright purplish-black. Ferruginous-red, with the posterior half of the abdomen and rarely also the mesonotum black.
   var. *dimidiatipennis*, H. de Saussure
   Wings uniformly suffused with amber-yellow or rufous, occasionally somewhat darker toward the base or toward the extreme tip 7
7. Thorax and abdomen almost entirely bright ferruginous-red; the second tergite always with a distinct, narrow, transverse, black band, sometimes interrupted in the middle. Head orange-yellow. var. *conicus* (Fabricius)
   Not entirely ferruginous-red and without a narrow, black line on the second tergite 8
8. Mostly black; more or less blotched with ferruginous on head, prothorax, mesopleura, propodeum, legs, and first abdominal segment; often the first segment only ferruginous. Wings uniformly brownish-yellow, but little darker toward the base . . . . var. *circinalis*, Fabricius
   Black, with the head, anterior half of the thorax, and posterior part of the abdomen (including hind margin of second tergite) ferruginous or slightly orange. Wings somewhat more conspicuously darkened in the basal half.
   var. *xanthurus*, H. de Saussure

9. Abdomen extensively yellow or orange-yellow. Wings amber-yellow, often darker toward the apex 10
   Abdomen with few or no yellow spots (at most two large spots near apex of first tergite or the posterior segments orange-red) 11
10. Body conspicuously bright yellow, ferruginous-red, and black. The black forms a distinct transverse fascia on the second tergite between the basal, ferruginous and the apical yellow area; the head, anterior half of thorax, and posterior half of abdomen are mostly bright yellow. Wings nearly uniformly amber-yellow . . . . var. *pyriformis* (Fabricius)
    Clypeus, front, antennae, pronotum, upper part of mesopleura, propodeum, anterior part of mesonotum (wholly or partly), first tergite (mostly), posterior third of second tergite, succeeding tergites and sternites, and legs (mostly) orange-yellow. The remainder of the body black. Wings brilliantly golden-yellow, the apical fourth purplish black.
    var. *latreillei*, H. de Saussure
11. Head more or less marked with yellow, especially in male; thorax practically without yellow (at most a narrow margin on pronotum). Two rectangular, elongate, well-marked spots on the apical part of the first tergite. Otherwise black and ferruginous. Wings hyaline, slightly tinged with yellow, and smoky in the radial cell . . . var. *fenestralis*, H. de Saussure
    Head and thorax extensively marked with bright yellow; the mesonotum black, with a comma-shaped spot on each side in its anterior half . . 12
12. Propodeum yellow. Abdomen black, more or less ferruginous on the first two segments . . . . . var. *tropicalis*, H. de Saussure
    Propodeum ferruginous. Abdomen more extensively ferruginous-red; the third to sixth segments mostly orange-red. var. *nigritarsis*, G. Meade Waldo

Eumenes maxillosus, typical colour phase.

Vespa maxillosa, de Geer, Mém. Hist. Ins., iii, 1773, p. 577, pl. xxix, figs. 1 and 2.

Eumenes maxillosus, H. de Saussure, in Grandidier, Hist. Phys. Nat. Madagascar, xx, pt. 1, Hym., 1890, p. 153 (♀♂). J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 56, 67, and 279 (♀♂).

Sphex tinctor, Christ, Naturgesch. d. Insect., 1791, p. 311, pl. xxxi, fig. 1.

Vespa guineensis, Fabricius, Entom. Syst., ii, 1793, p. 277.

Eumenes erythrospila, P. Cameron, Wiss. Ergebn. Schwed. Zool. Exp. Kilimandjaro, ii, 8, 6, 1910, pp. 175 and 178 (♀♂).

Eumenes tinctor var. *minor*, Magretti, Ann. Mus. Civ. Genova, xxi, 1884, p. 609 (♀).

The typical form occurs over nearly the whole of Africa (except Morocco, Algeria, Tunis, Tripoli, and Egypt), Madagascar, and south-western Arabia, being perhaps the most common wasp of that part of the world.

Katanga: Lubumbashi; Uimilolo River; Panda River, common (Mich. Bequaert).

Northern Rhodesia: Victoria Falls (L. Péringuey), S.A. Mus.

Southern Rhodesia: Bulawayo (G. Arnold); Sebakwe (D. Dods); Bindura (D. Coghill); Salisbury, S.A. Mus.

Portuguese East Africa: Lourenco Marques (C. W. Howard).

Natal: Mfongosi (W. E. Jones); Pt. Shepstone (K. Barnard); Durban (W. Haygarth), S.A. Mus.

Cape Province: Lion's Head, Cape Town and Mossel Bay (R. E. Turner), Brit. Mus.

There are at the British Museum four specimens (♀ and ♂) of typical *maxillosus*, from Porto Grande, St. Vincent, W.I., which were accidentally introduced with ships.

Eumenes maxillosus var. *savignyi*, Guérin.

Eumenes savignyi, Guérin, Icongr. Règne Animal, ii, Atlas, 1835, pl. lxxii, figs. 4 and 4*a*–4*d*; iii, Texte, Ins., 1844, p. 446. Spinola, Ann. Soc. Ent. France, vii, 1838, p. 503 (♀♂).

Savigny, Descr. Egypte, Atlas, Zool., Ins. Hym., 1812, pl. viii, fig. 4 (without name).

Eumenes tinctor var. *ferruginea*, Magretti, Ann. Mus. Civ. Genova, xxi, 1884, p. 610 (♀♂).

This differs so little from the typical form that it hardly deserves a name. Since it is the only colour phase found in Egypt, certain entomologists may wish to distinguish it; they should, however, be aware that all transitions to the darker, typical *maxillosus* may be found. Often the wings are more russet than black. I have seen *savignyi* from the Fayum, Cairo, and Khartoum.

The name should be credited to Guérin and not to Spinola.

Eumenes maxillosus var. *dimidiatipennis*, H. de Saussure.

Eumenes dimidiatipennis, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 51 (♀♂).

Eumenes maxillosus var. *dimidiatipennis*, A. v. Schulthess, Societas Entomol., xxv, 1910, p. 17. J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 59 and 280.

Eumenes transcaspicus, F. Morawitz, Horae Soc. Ent. Rossicae, xxix, 1895, p. 414 (♀♂).

This is found in north-eastern Africa, from southern Algeria and the central Sahara to Somaliland, Arabia, Sokotra, Palestine, Syria, Persia, Transcaspia, and western India.

Eumenes maxillosus var. *reginus*, H. de Saussure.

Eumenes regina, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 49, pl. x, figs. 8 and 8*a-b* (♀).

Eumenes maxillosus var. *reginus*, A. v. Schulthess, Societas Entomol., xxv, 1910, p. 17. J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 58 and 281.

Eumenes kohli, H. Brancsik, Jahresh. Naturw. Ver. Trencsiner Comit., xiii-xiv, 1891, p. 158 (♀).

Known from Madagascar and Nossi Bé only.

Eumenes maxillosus var. *tropicalis*, H. de Saussure.

Eumenes tropicalis, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 54 (♀).

Eumenes maxillosus var. *tropicalis*, A. v. Schulthess, Societas Entomol., xxv, 1910, p. 17. J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 59, 69, and 281, pl. i, fig. 3 (♀♂).

Eumenes tropica, F. Smith, Cat. Hym. Brit. Mus., v, Vesp., 1857, p. 27.

This is a common colour phase in West Africa, from Senegal to the Congo. It extends, however, farther south-eastward than was indicated on the map published in 1918 (p. 63, fig. 48).

Katanga : Panda River and Kimilolo River, many ♀ and ♂ (Mich. Bequaert).

Southern Rhodesia : Salisbury, 1 ♀, April 1913, S.A. Mus.

Eumenes maxillosus var. *fenestralis*, H. de Saussure.

Eumenes fenestralis, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 53, pl. x, fig. 6 (♀♂).

Eumenes maxillosus var. *fenestralis*, A. v. Schulthess, Societas Entomol., xxv, 1910, p. 17. J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 59, 68, and 280 (♀♂).

Eumenes fenestratus, Radoszkowsky, Jorn. Sc. Math. Phys. Nat. Ac. Lisboa, viii, No. 31, 1881, p. 203.

Eumenes variventris, P. Cameron, Wiss. Ergebn. Schwed. Zool. Exp. Kilimandjaro, ii, 8, 6, 1910, pp. 175 and 180 (♂).

This interesting colour phase appears to be quite widely distributed over the African continent. It is known from the Senegal and Abyssinia to Angola and Natal.

Portuguese East Africa: Umbeluzi, 1 ♂, May 25, 1909 (C. W. Howard), U.S. Nat. Mus.

Natal: Mfongosi, 1 ♀ and 1 ♂, February and March, 1917 (W. E. Jones), S.A. Mus.

The South African specimens are coloured exactly like those I have seen from the Congo. Moreover, Gribodo has previously recorded *fenestralis* from Lourenco Marques and even from Port Elizabeth.

Eumenes alluaudi, J. Pérez.

Eumenes alluaudi, J. Pérez, Ann. Soc. Ent. France, lxiv, 1895, p. 206 (♀♂). J. Bequaert, Psyche, xxviii, 1921, p. 160, figs. 1*a*-1*d* (♀♂).

Eumenes lepeleterii var. *alluaudi*, J. Bequaert, Bull. Amer. Mus. Nat. Hist., xxxix, 1918, pp. 77 and 277.

This species does not occur on the African continent, being restricted to the Seychelles and the Glorioso Islands. At one time I believed that it was a colour phase of *E. lepeleterii*, but a study of specimens has shown that it is morphologically quite distinct, and rather allied to *E. maxillosus*.

It may be regarded as derived through oceanic isolation from *E. maxillosus*. A parallel case is afforded by *Eumenes germaini*, Lucas (Bull. Soc. Ent. France, 1875, p. 76; Ann. Soc. Ent. France, (5), vi, 1876, p. 300), of New Caledonia and the Loyalty Islands. *E. germaini* has sometimes been regarded as a synonym of *E. xanthurus*, de Saussure (which is but one of the colour phases of *E. maxillosus*); but on morphological grounds it is a distinct species, as shown by a series of specimens at the British Museum. The shape of the first abdominal segment is quite different from that of *E. maxillosus*: seen from above it is distinctly divided into a slender, basal half and a swollen, apical half about three times as wide as the base; slightly beyond the middle the first tergite bears on each side a very prominent, curved, spiracular tooth. The head is conspicuously thickened, the vertex being swollen and longitudinally furrowed behind; in both sexes the posterior ocelli are farther from the hind margin of the vertex than from each other. In the male the clypeus has a most extraordinary shape, which may be regarded as an exaggeration of that of *E. alluaudi*: the anterior portion is produced into a long, hatchet-like plate, the thin, median margin being slightly and concavely arcuate, while the projecting and divergent sharp edges are strengthened by a longitudinal ridge. The antennal hook of the male is similar to that of *E. alluaudi.*

It is of interest that in both cases these precinctive species of *Eumenes* replace what apparently is their ancestral form. For, although colour phases of *E. maxillosus* are common in Madagascar and the Comoros, none have been collected in the Seychelles and Glorioso Islands; they are likewise absent from New Caledonia and the Loyalty Islands, while still occurring in the New Hebrides.

Eumenes macrocephala, H. de Saussure.

(Text-figure 14, *A–G*.)

Eumenes macrocephala, H. de Saussure, Et. Fam. Vesp., i, 1852, p. 37 (♂).

The following is a translation of the original description:—

"Black, ornamented with yellow.

"Male.—Length: 18 mm.; spread of wing: 32 mm.

"Female unknown.

"Male.—A thickset insect. Head black, thick, so that the eyes do not entirely cover the sides. Clypeus straightly truncate at the anterior margin, yellow and slightly silvery. Mandibles, an incomplete margin of the orbits, a triangular spot on the front, and a spot on each side of the mandibles below the head, yellow. Antennae yellow on the under side, black on the upper side. Thorax black; prothorax yellow, with black posterior corners; between these corners and the tegulae there is an arcuate ferruginous line. Tegulae, two spots on the corners of the scutellum, and postscutellum yellow, as is also a large spot on each side of the metathorax. Head and thorax granulate, covered with russet pile. Petiole strongly campanulate, without any spine, black, ending in an irregular, yellow fascia; its swollen portion longitudinally furrowed. Second abdominal segment oval, black, margined with a broad yellow fascia somewhat notched in the middle, and marked on the sides with two elongate spots that almost join on the middle line; third segment yellow with a black base; the succeeding segments black with a rather indistinct, ferruginous marginal line. Under side of the abdomen black, the second segment ornamented with three yellow spots that almost touch, the succeeding segments with a broad, longitudinal, yellow band. Legs yellow; coxae and basal half of femora black, with a yellow dot on each coxa. Wings hyaline, slightly ferruginous; a brown tinge in the radial cell.

" Relationship and differences.—Very close to *E. amedei.* It differs from that species in the clypeus being straightly truncate and not rounded off, etc.

" Inhabits the Cape of Good Hope (Jurine Collection at the Museum of Geneva)."

A. v. Schulthess (Societas Entomol., xxv, 1910, p. 24), who examined the type, states that *E. macrocephala* cannot be distinguished from the Palaearctic *E. arbustorum* (Panzer). He suggests that the country of origin given by de Saussure might have been due to an error. I have, however, received from the South African Museum a male which agrees perfectly with de Saussure's description of *macrocephala*, and I have little doubt that it represents that species. The specimen is labelled Potchefstroom, Transvaal (T. Ayres), and there is no reason to assume that this is due to an error, as the South African Museum possesses no Palaearctic wasps. A detailed description of this specimen follows.

Male.—Head seen in front but little broader than high. Clypeus much longer than wide, elongate hexagonal, but little convex and slightly depressed before the apex ; the anterior, free portion about as long as the upper, interocular part ; the apical margin a little over one-third, but less than one-half, the total width of the clypeus, straightly truncate, with distinct but bluntly rounded edges. Vertex without fovea. Ocelli placed in a flattened triangle ; the posterior ocelli a little farther apart than from the inner orbits, about as far apart as from the hind margin of the vertex ; anterior ocellus larger. Front much raised and distinctly, though bluntly, carinate between the antennae. Eyes bare, about one and one-half times as far apart on the vertex as at the clypeus. Vertex and temples quite well developed, as in *E. arbustorum*, margined behind with a continuous, sharp rim. Mandibles very long and slender, decussate, straight, not curved at apex, with three superficial notches along the inner margin. Antennae moderately elongate ; the flagellum almost uniformly thick over its entire length ; antennal segments—4 to 6 distinctly and 7 slightly longer than broad, 8 square, 9 to 12 very little broader than long ; terminal hook long, robust and strongly curved, the blunt apex lying in a deep pit at the under side in the centre of the tenth antennal segment ; in profile the hook is finger-shaped, being rather rapidly narrowed beyond the base ; but seen from the upper side it is lengthened spatulate and bluntly ridged in the middle over the entire dorsal length. Thorax elongate oval, quite convex dorsally, about one and one-half times as long as high in profile, and one-third longer than wide seen from above. Pronotum squarely truncate; the anterior margin rimmed throughout with a distinct raised line, which is but little more pronounced on the sides, below the humeral angles. Humeral angles quite distinct, but blunt. Mesonotum about as long as wide, with a fine, median, impressed line over its anterior half. Scutellum slightly convex, very gently sloping posteriorly, with a distinct, median, longitudinal line almost forming a furrow posteriorly. Postscutellum almost flat, somewhat depressed posteriorly, entirely within the posterior slope of the thorax, without any trace of median line. Propodeum moderately developed, seen from above about as long as the scutellum, quite convex, completely rounded off, without ridges or projecting angles on the sides, quite deeply grooved in the middle over its whole length; just above the base of the abdomen the sides of the channel are much raised and form a blunt angle, which is separated by a narrow notch from the valvulae. Mesopleura without carinae or ridges along the epicnemial depressions, which are but slightly marked for the fore and middle legs. Legs more slender than in *E. arbustorum*: the hind tibiae are rather more abruptly widened

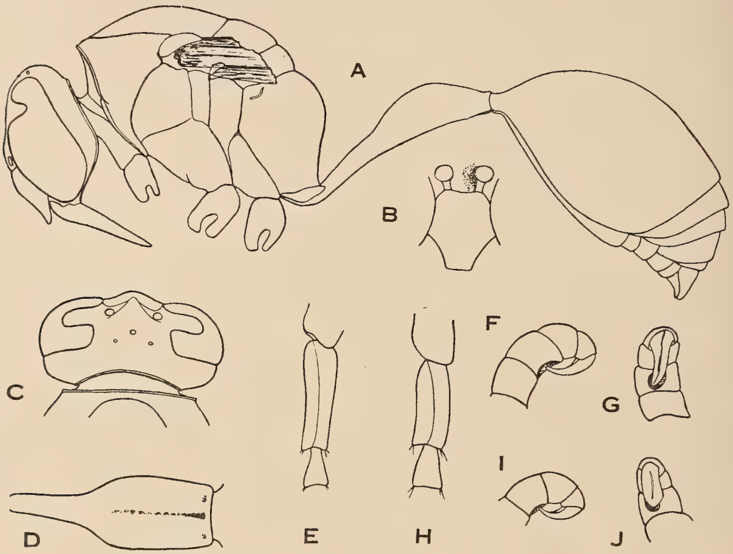

Fig. 14.—*A–G*, *Eumenes macrocephala*, H. de Saussure. *A*, male in profile; *B*, clypeus of male; *C*, head of male from above; *D*, first tergite of male from above; *E*, two basal segments of middle tarsi of male from above; *F*, terminal segments of male antenna in profile; *G*, terminal segments of male antenna from below. *H–J*, *Eumenes arbustorum* (Panzer). *H*, two basal segments of middle tarsi of male; *I*, terminal segments of male antenna in profile; *J*, terminal segments of male antenna from below.

in the apical half than in that species, being more slender at the base; the tarsi are also thinner, the difference being quite well marked in the middle and hind tarsi; the basitarsus of the middle legs, although more slender than in *E. arbustorum*, has the same characteristic shape: it forms an elongate prism, with a flattened under surface, the upper surface divided by a blunt ridge into an anterior bare and a posterior densely hairy face *; the hairs are short, stiff, and somewhat silky, and form a conspicuous brush; this brush is present in other *Eumenes* too, but in both *arbustorum* and *macrocephala* it is quite conspicuous on account of the unusual shortening of the basitarsus. Venation of wings of the usual *Eumenes* type, differing but little from that of *E. arbustorum* and *E. caffer*. First abdominal segment moderately long, elongate campanulate, more slender than in *E. arbustorum*; nearly as long as the thorax in profile; a little over three times as long as its greatest width seen from above; nearly straight along the ventral line in profile; rather suddenly swollen in its apical half, which is but little more than twice as thick as the base, regularly convex and gently sloping toward the apex; in profile it is considerably less swollen than in *E. arbustorum*, though of the same general shape; seen from above the basal half forms a slender petiole, which widens abruptly into the swollen apical half; this swollen portion is over twice as wide as the basal stalk, fairly parallel-sided, though not with straight margins, much more elongate than in *E. arbustorum*, nearly twice as long as its greatest width, dorsally with a longitudinal groove, which becomes quite deep before the apex; the spiracles form very low but distinct protuberances on the sides near the base of the swollen part, but they are not visible from above. Second segment elongate oval and slightly depressed, about equally convex dorsally and ventrally, about one and one-half times as long as high in profile and one and one-half times as long as wide seen from above; basal neck short, but quite distinct, conspicuously narrower than the apex of the first tergite; apical margin simple, depressed; sternite flattened at base. Last (seventh) sternite straightly truncate at apex, with broadly rounded edges, the apical margin slightly raised in the middle; its surface conspicuously concave, forming a broad, somewhat triangular cavity, which narrows toward the base of the sternite, where it is more like a channel between two converging, blunt ridges; the concave area is finely granulate and covered with short hairs, which are somewhat longer toward the apex.

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* This peculiarity of *E. arbustorum* is correctly described by F. Morawitz, Horae Soc. Ent. Rossicae, xxix, 1895, p. 419.

Puncturation very dense, but moderately coarse on head and thorax, somewhat larger on the vertex; clypeus with very few and quite widely scattered, minute punctures, practically impunctate, dull; on the temples (behind the eyes) the punctures are very fine and remote; the median channel of the propodeum shows a series of transverse striae, especially well marked in the lower half; tegulae with few, irregular punctures toward the margins, nearly impunctate in the centre. First abdominal tergite smooth and impunctate in its basal two-thirds; the apical third with remote, medium-sized punctures, much smaller than those of the thorax, and fairly uniformly scattered over the entire width. The remainder of the abdomen impunctate, except for a few minute punctures on the basal neck of the second tergite. Head and thorax with moderately long, greyish pile; the clypeus somewhat silvery; abdomen and legs almost bare.

Black, with conspicuous and abundant bright yellow markings as follows: clypeus; mandibles (passing into ferruginous in the apical half); scape of antennae (except for a broad, black streak over the upper surface); front between the antennae; inner orbits from the clypeus to half-way in the ocular sinus; a broad line along the outer orbits in the upper half of the temples; pronotum entirely; upper plate of mesopleura entirely and continuous with a very large spot on the lower plate; posterior half of tegulae; a broad, transverse band on the scutellum; postscutellum entirely; propodeum (except for a wide, median stripe in the longitudinal channel); an elongate, dorsal spot on each side near the base of the swollen part of first tergite; two much larger spots at apex of first tergite, narrowly connected medially and produced anteriorly on the sides; second tergite, except for a broad black mark in the shape of an inverted T, the base of which widens over the basal neck, while the arms form a transverse band about the middle (the yellow covering about the apical third of the tergite and somewhat angularly notched with black medially); second sternite (except for the basal black third and a small black spot on each side shortly before the apex); third to sixth sternites and tergites, except at base; a transverse fascia over the middle of the seventh tergite; large spots on the fore and middle coxae; the major part of the fore and middle femora; the tibiae and much of the tarsi. The basal half of the flagellum and the hind femora are bright ferruginous-red; while the upper side of the fore and middle femora is extensively ferruginous and the apex of the tibiae and tarsi also shows a ferruginous tinge. Wings subhyaline, somewhat suffused with amber-yellow anteriorly, especially in the subcostal cell; the radial cell more infuscated and somewhat purplish.

Length (h.+th.+t. 1+2): 14 mm.

A comparison with males of typical *E. arbustorum* (Panzer), of the Pyrenees, France, discloses several differences in structure, some of which may be pointed out:

(*a*) The clypeus is much longer than wide and straightly truncate at the apex. In *arbustorum*, it is relatively shorter and quite evenly, arcuately rounded off.

(*b*) The flagellum is shorter and thicker throughout; its terminal hook rather narrow and bluntly ridged over the whole length. In *arbustorum*, it is more elongate, almost all the antennal segments (except the eleventh and twelfth) being longer than wide; the terminal hook broadly spatulate, with a short dorsal crest (fig. 14, *I–J*).

(*c*) The thorax is much less swollen. In *arbustorum*, it is but little more than one-fourth longer than high.

(*d*) The propodeum is more convex on the sides, the median channel being much deeper. In *arbustorum*, the channel is more broadly open and its sides do not form blunt angles above the valvulae.

(*e*) The legs are more slender, which is especially conspicuous for the tarsi and the hind tibiae. In *macrocephala*, the middle basitarsus is over twice the length of the second tarsal segment and about three times as long as wide. In *arbustorum*, the hind tibiae are short and thick, gradually widening from base to apex; the middle basitarsus is about twice the length of the second tarsal segment and between two and three times as long as wide (fig. 14, *H*).

(*f*) The first abdominal segment is shaped quite differently. In *arbustorum*, it is distinctly shorter than the thorax; the apical half much more swollen, nearly three times as thick as the basal stalk in profile, and seen from above but little longer than wide; it is also much more densely and coarsely punctured than in the male here described as *macrocephala*.

(*g*) The last sternite in *E. arbustorum* is more shallowly and uniformly depressed.

With regard to coloration the resemblance with *E. arbustorum* var. *amedei*, Lepeletier de St. Fargeau, of Algeria, is quite remarkable. To judge from de Saussure's description and figure, *E. sichelii*, de Saussure (Et. Fam. Vesp., i, 1852, p. 36, pl. x, fig. 2), of Albania, is still more like it; in addition, *sichelii* is said to have the clypeus straightly truncate at apex, so that it might be even more closely allied to *macrocephala* than *arbustorum*. Unfortunately I have no specimens of *sichelii* for comparison.

Although the structural characters are quite sufficient to regard *arbustorum* and *macrocephala* as specifically distinct—the differences between some other species of *Eumenes*, such as the Nearctic *E. fraternus*, Say, *E. verticalis*, Say, and *E. globulosus*, de Saussure, are much more obscure—yet there can be little doubt that the two have been derived from some common ancestor. Nowadays the Palaearctic *E. arbustorum* (with several colour phases) does not extend southward beyond the Mediterranean subregion, being thus separated from *E. macrocephala* by the entire tropics.

If one relies upon the colour alone, *E. macrocephala* and *E. caffer* might easily be confused, and it is probably for this reason that *macrocephala* has been thus far overlooked. The black marking of the second tergite, however, does not form a complete cross as in *caffer*. Structurally the two are not in the least related.

DOUBTFUL SPECIES.

Eumenes higletti, G. Meade Waldo.

Eumenes higletti, G. Meade Waldo, Ann. Mag. Nat. Hist., (8), v, 1910, p. 43 (♀).

"♀, black; clypeus, mark between antennae at base, a line behind them, pronotum almost reaching to tegulae, large ovate spot (interrupted in the centre) on mesopleura on each side, posterior margin of postscutellum, median segment broadly on each side, apical margin of the petiole on each side, apical margin of second abdominal segment, except medio-dorsally, and two small isolated spots, apical margins of segments 3, 4, 5 (interrupted dorsally and continuous ventrally), yellow. Anterior femora and tibiae on outside, base of intermediate and posterior tibiae, yellow. Antennae beneath, two quadrate spots on scutellum, tegulae, metapleura on each side, petiole medially, apical segment of abdomen, legs (except where yellow), ferruginous. Wings hyaline, tinted with a golden sheen toward costal area, radial cell fuscous. Clypeus broadly ovate, truncate at the apex, rather longer than broad; pronotum angular in front; median segment truncate, produced toward apex on each side to form a V-shaped depression; petiole rather longer than thorax, slender, the apical portion broader, a small tubercle on each side; following segments elongate ovate. Punctured: vertex and thorax finely and evenly;

mesonotum with a short longitudinal carina, not reaching the middle; petiole and abdomen shining anteriorly, petiole very minutely and sparsely punctured. Vertex of head and median segment with a dense grey pubescence. Length, 17 mm. Hab., Tamsoo, Gold Coast (G. A. Higlett); 1 ♀."

Eumenes signicornis, F. Walker.

Eumenes signicornis, F. Walker, List of Hymenoptera collected by J. K. Lord in Egypt, 1871, p. 30 (no sex).

"Black, roughly punctured. Front yellow, slightly silvered; a small yellow dot between the antennae; a short yellow line along the hind side of each eye and a shorter yellow line along the outer side of each eye. Antennae reddish, with a piceous streak near the base and a piceous band near the tip. Thorax; a band on the fore border straightened in the middle, tegulae, two short bands on the scutellum, two transverse streaks on each side, and a large spot on each side of the metathorax yellow. Legs reddish; tibiae and four anterior femora yellow on the outer side. Wings cinereous; veins black. Fore wings with a blackish streak along the apical part of the costa. Length of the body 5 ? lines." Massaua, Eritrea.

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10. *Descriptions of New Species of Carabidae (Coleoptera), with Notes and Additional Localities of some already known Species.*—By the late Dr. L. Péringuey.

[At the time of his death the late Dr. Péringuey was engaged on a Revision of his monograph of the *Carabidae*, and the following notes and descriptions were found amongst his papers, and, according to endorsements on the MSS., had been finally corrected for printing. Only such portions as were repetitions of earlier descriptions have been cut out.

The types of the new species are in the South African Museum.—Ed.]

Family CARABIDAE.

Tribe PANAGAEINI.

Gen. Tefflus Latr.

Descr. Cat., p. 472.

Key to the Species.

A^2. Size large. Abdominal segments without a puncture on each side of the centre.
  - a^2. Elytra elongate-ovate.
    - b^2. Pronotum very scabrose and as long as broad . . . *delegorguei*
    - b^1. Pronotum moderately scabrose, broader than long . . *molossus*
  - a^1. Elytra sub-parallel . . . . *kafuenus*

A^1. Size smaller. Abdominal segments with a puncture on each side of the centre.
  - b^2. Prothorax with the median line distinct but not very deep. Elytra black *carinatus*
  - b^1. Prothorax with the median line conspicuous. Elytra dark violaceous or purplish . . . . *violaceus*

T. delegorguei Guér.

Descr. Cat., p. 473.

Locality.—Transvaal (Nylstroom, Louis Trichardt); Mozambique (Beira).

T. kafuenus Pér.

Ann. S. Afr. Mus., vol. v, 1908, p. 284.

Distinguished by the more sub-parallel shape of the elytra in the ♂, which is much narrower than in *Delegorguei*, while in the ♀ the elytra are much less constricted towards the base and less ampliated towards the middle; the prothorax is slightly broader in both sexes than in *Delegorguei*, and the median longitudinal line much more distinct; the costae and sculpture of the intervals of the elytra are much the same in all the species of the genus, but the scabrose impressions in the intervals of the costae are single in the anterior part in this ♀. Two examples, a ♂ and a ♀. The former, the type of the species, is proportionally smaller than the example I take to be the ♀ and much more parallel-shaped.

Length, 39–48 mm.; width, 13–19 mm.

Locality.—N.-W. Rhodesia (Kafue River); S. Rhodesia (Umtali).

T. carinatus Kl.

Descr. Cat., p. 474.

Locality.—Mozambique (Rikatla, Beira, Tembe, Amatongas); S. Rhodesia (Melsetter).

Gen. Eudema Cast.

Syn: *Craspedophorus* Hope; *Epicosmus* Chaud.

Descr. Cat., p. 474.

Craspedophorus, and also *Epicosmus*, are posterior to *Eudema*. Chaudoir includes in *Eudema* only one Indian species, whereas Castelnau founded the genus for the African and Indian species.

The difference between *Craspedophorus sensu* Chaud. and *Epicosmus*, also *sensu* Chaud., seems to consist in a slight variation in the securiform shape of the ultimate joint of the palpi.

Key to the Species.

A^3. Elytra without any yellow patch. Prothorax moderately narrow, edges strongly recurved . . . . *Craspedophorus*
  a^2. Elytra with tectiform carinae moderately punctate laterally *impictum*
  a^1. Elytra sharply carinate, carinae roughly punctate laterally *zambezianum*
A^2. Elytra with two yellow patches on each side . . . . *Epicosmus*

B^6. Prothorax narrow, edges strongly recurved.
  a^2. Yellow patches on the elytra extending on four costae . *ornatum*
  a^1. Yellow patches on the elytra restricted to two (alternate) segments *rikatlense*
B^5. Prothorax broad, edges strongly recurved. Prothorax slightly attenuate laterally in front. Anterior and posterior bands sinuate, extending on five costae . . . . *festivum*
B^4. Prothorax not attenuate laterally in front.
  a^3. Anterior and posterior bands transversely quadrate . . *pretiosum*
  a^2. Anterior band extending on four costae . . . . *laticollis*
  a^1. Anterior band extending on three alternate costae . . *merum*
B^3. Prothorax hexagonal.
  a^2. Elytra not convex.
  b^2. Elytra sharply carinate, hind band transverse . . . *gratiosum*
  b^1. Elytra not sharply carinate, hind band arcuate . . . *nobile*
  a^1. Elytra gibbose. Elytra not sharply carinate, hind band transverse *bonvouloiri*
B^2. Prothorax rounded laterally. Elytra not sharply carinate, hind patch strongly arcuate . . . . *opulentum*
A^1. Elytra with two discoidal bands and a humeral; three yellow patches on each side.
B^1. Prothorax broad, edges recurved . . . . . *sexmaculatum*

Eudema impictum Boh.

Descr. Cat., p. 476.

Locality.—Natal; Transvaal (Lydenburg); Natal (Durban); S. Rhodesia (Salisbury, Umtali); Mozambique (Busi, Beira).

Eudema ornatum Boh.

Descr. Cat., p. 478.

Locality.—Natal (Durban); S. Rhodesia (Umtali, Salisbury); occurs also in Zanzibar.

Eudema difficile Chaud.

Descr. Cat., p. 479.

This species, founded on a single example from the shores of the Zambesi River, is very closely allied to *C. erichsoni* and *oxygonus*, both from the west coast of Africa. It has not been recorded again.

Eudema festivum Klug.

Abh. Ak. Wiss. Berlin, 1832–33, p. 128, pl. i, f. 7.

This species is widely distributed. Described originally from Madagascar, it is recorded from the Comoro Island, Quango, West Africa, and now from S. Rhodesia (Umtali). It is easily differentiated from the other South African species having a broad thorax by it being narrower at apex than at the base, more regularly ampliated laterally and not emarginate towards the basal angle; the surface is roughly and closely punctate; the sub-parallel elytra are less densely pubescent than the prothorax, moderately highly costate, with the striae finely but deeply punctate, and they have each at about one quarter of the length a yellow band extending from the 4th to the 8th costa, and consisting of three lines united alternately by two shorter inner ones; in the third posterior part is a similar patch in which the two alternate lines project more towards the apex than in the anterior patch.

Length, 19–21 mm.

Locality.—S. Rhodesia (Umtali).

Eudema bonvouloiri Chaud.

Descr. Cat., p. 478.

The characteristic gibbosity of the elytra varies in individuals of both sexes.

Locality.—Transvaal (Barberton, Three Sisters, White River, Shilouvane, Lydenburg, Woodbush, Griffin Mine, Malalane).

Gen. TRICHISIA Motsch.

Bull. Soc. Nat. Mosc., 1864, ii, p. 331.

This genus is extremely close to *Eudema* (*Epicosmus*), the main difference according to Chaudoir being in the shape of the ligula, the paraglossae of which do not project beyond it. The prothorax is widely arcuate laterally from the neck to the deep hind incision, and pedunculate at base.

The only African species known is *Trichisia rhodesiana* Pér.; the other three species included in the genus are from India, Hong-Kong, and Eastern Australia.

Gen. MICROCOSMUS Chaud.

Descr. Cat., p. 481.

Microcosmus tenuipunctatus Laf.

Descr. Cat., p. 482.

Locality.—Port Elizabeth (Cape). Apparently restricted to the western Cape Province. The brightness of the yellow markings and the very short pubescence on the elytra are very noticeable.

Microcosmus aurantiacus Chaud.

Descr. Cat., p. 483.

Syn : *laetiusculus* Chaud.

Descr. Cat., p. 483.

I am of opinion that *M. laetiusculus* cannot be separated from *M. aurantiacus*.

Locality.—Cape (Uitenhage) ; Transvaal (Pietersburg, Lydenburg) ; S. Rhodesia (Sawmills) ; Mozambique (Beira).

The size of this species is very variable ; I have seen two very small examples (5 mm.) from Newcastle (Natal).

Gen. EPIGRAPHUS Chaud.

Descr. Cat., p. 483.

Epigraphus amplicollis Sch.

Descr. Cat., p. 484.

Locality.—Natal (Durban) ; Mozambique (Beira).

TRIBE CHLAENINI.

Gen. CHLAENIUS Bonelli.

Syn : *Rhizotrachelus, Vertagus, Ocybatus, Dinodes, Pteroticus.*

The additions to this genus are mainly from Southern Rhodesia, where other species previously described from Nyassaland, British East Africa, and Tanganyika Territory will be doubtless found to occur. In Hereroland and Ovamboland only a few species have been recorded. It is doubtful if any new or striking form will be found here, because the climatic conditions are identical with those of Bechuanaland and western South Rhodesia. Very few species are known from Angola, but the insect fauna of the southern part closely approximates to that on the left bank of the Cunene River.

I have recast the key to the species of the genus *Chlaenius*, which I divide into two sections according to the shape of the last joint of the palpi—*i.e.* either (1) securiform or broadly securiform, or (2) cylindrical. These two divisions are split into subsections according to the shape of the prothorax, which is regularly ampliate, rounded, and not or very little more narrowed at base than at apex; regularly cordate or elongate cordate, the base being much narrower than the apex; sub-trapezoidal with the base sinuate laterally, or with the base not, or very little, sinuate laterally.

This arrangement is a very natural one, and helps to separate without much difficulty species which, in spite of similar livery, have really no affinity. Only in one case is one species (*Chlaenius dohrni*) widely separated from its congeners (*Chlaenius zanzibaricus*, etc.).

First Section.

Palpi with the ultimate joints securiform or triangular, usually more broadly so in the male than in the female.

- A^3. Palpi broadly securiform or diamond-shaped.
- B^2. Elytra with the alternate intervals sharply tectiform.
- C^2. Prothorax one-fourth broader than long, ampliate rounded laterally.
    - a^2. Prothorax a little attenuate laterally at apex. Each elytron with a sub-median quadrate yellow patch . . . . . . *sulcatus*
    - a^1. Prothorax not attenuated laterally in front. Each elytron without a yellow patch . . . . *immaculatus*
- C^1. Prothorax regularly ampliate, rounded laterally.
    - a^2. Each elytron without a yellow patch . . . . . *crudelis*
    - a^1. Each elytron with two yellow patches . . . *quadrimaculatus*
- B^1. Elytra without alternately raised intervals.
- C^5. Prothorax regularly ampliate, rounded laterally. Intervals of elytra convex.
    - a^2. Each elytron with one posterior large, at times irregular yellow patch; legs and antennae black . . . . *myops*
    - a^1. Each elytron with one posterior, ovate, small yellow patch; first antennal joint and whole of legs yellow . . . . . . *orphanus*
- C^4. Prothorax sub-trapezoidal. Intervals of elytra sharply costate. Elytra without yellow markings, outer margin brilliant green . *cupreocinctus*
- C^3. Prothorax strongly cordiform. Elytra without a green margin . . *caffer*
- C^2. Prothorax and elytra very slender.
    - a^2. Each elytron with a median, transverse yellow band; first antennal joint and base of femora reddish yellow . . . . . *hacquardi*
    - a^1. Elytra concolorous, the three basal joints of antennae cyaneous *lucidulus*
- C^1. Prothorax slender, slightly longer than, or as long as, broad.
    - a^3. Each elytron with a postical yellow patch not extending over more than four intervals.
    - b^2. Last joint of palpi diamond-shaped.
    - c^2. Outer margin of prothorax flavescent; three basal antennal joints reddish yellow . . . . *dissidens*
    - c^1. Outer margin of prothorax not flavescent; only the basal antennal joint reddish yellow . . . . *marleyi*
    - b^1. Last joint of palpi broadly securiform.
    - c^2. Legs reddish yellow, except knees and tarsi, which are infuscate *rebellis*
    - c^1. Legs reddish yellow . . . . *bohemani*

*a*². Postical band extending from the second stria over the whole posterior part. A slender form ; outer margin not flavescent, the three basal antennal joints reddish . . . . *ditulus*

*a*¹. Elytra without yellow patches.

*b*². The whole antennae red . . . . *reichei*

*b*¹. The whole antennae not red . . . . . *stenotrachelus*

A². Palpi securiform.

B³. Each elytron with a postical yellow patch.

C². Patch extending from the suture to the outer margin . . *fasciger*

C¹. Patch extending on four or five intervals only.

*a*³. Prothorax slender, slightly angular laterally . . . *effugiens*

*a*². Prothorax slender, not angular laterally.

*b*². Yellow patch on each elytron whole.

*c*². Intervals of elytra convex . . . . . . *fenestratus*

*c*¹. Intervals plane . . . . *cribellatus*

*b*¹. Yellow patch on each elytron deeply incised posteriorly . *ovambo*

*a*¹. Prothorax a little ampliated. The three basal antennal joints reddish yellow.

*b*². Legs yellowish red . . . . *finitimus*

*b*¹. Knees, apices of tibiae red, tarsi black ; patch oblong . *perspicillaris*

B². Each elytron without a postical yellow patch. Prothorax ampliate rounded, as broad as long. Uniformly green or greenish blue . . *fulvipes*

B¹. Each elytron with a long arcuate yellow band reaching the apex along the outer margin. Prothorax trapezoidal, broader at base than at apex *conformis*

A¹. Palpi broadly securiform. Prothorax sub-parallel, slightly sinuate towards the base. Margin of elytron yellow . . . . . *capensis*

Second Section.

Palpi with the ultimate joints cylindrical or nearly so, and truncate at tip. Male without a small tooth in the inferior basal part of the fore femora.

A³. Prothorax regularly ampliate, rounded laterally.

B². Elytra with an apical sutural yellow patch.

C². Pronotum red.

*a*³. Pronotum with two median narrow fuscous bands.

*b*². No anterior yellow patch on each side. Outer margin of elytra narrowly yellow. Pronotal bands not interrupted in the anterior part *vitticollis*

*b*¹. An anterior yellow patch on each side. Outer marginal patch reaching the 5th stria ; head green. The two median pronotal bands interrupted in the anterior part . . . . . . *pulchellus*

*a*². Pronotum without any fuscous band. Elytra with the marginal yellow band ascending the suture, and on each side a sub-quadrate yellow patch situated at about three-quarters of the length *fulvicollis*

*a*¹. Pronotum red, with a broad fuscous median band. Elytra with an outer marginal yellow band, narrowed in the median part, wider behind, and distinctly ascending the suture, and on each side a subovate yellow patch situated slightly past the median part . *kirki*

C^1. Pronotum fuscous bronze.

a^2. Elytra with a small bright yellow post-median quadrate patch on each side and a triangular sutural apical spot . . . *verecundus*

a^1. Elytra with a triangular sutural apical spot and no post-median patch, outer margin narrowly flavescent . . . *communimacula*

B^1. Elytra without an apical sutural yellow patch.

C^5. Elytra without post-median patch or sutural spot, outer margin not flavescent.

a^2. Prothorax as long as broad; head very shiny, upper side of body subopaque . . . . *nitidiceps*

a^1. Prothorax slightly longer than broad; head, prothorax, and elytra fusco-cyaneous . . . . *infersus*

C^4. Elytra black, outer margin of elytra somewhat coarsely shagreened and black, body very large . . . . *zanzibaricus*

C^3. Elytra very dark blue, outer margin of elytra finely aciculate and cyaneous, body very large . . . . *coeruleolimbatus*

C^2. Elytra black, outer margin of thorax and elytra narrowly blue . . *lugens*

C^1. Elytra black, outer margin of thorax and elytra concolorous . . *morio*

A^2. Prothorax cordiform.

B^3. Prothorax strongly cordiform, slightly broader than long.

C^3. Each elytra with a discoidal patch or patches and an apical marginal one.

a^3. Elytra broad, parallel, a median quadrate yellow patch and a triangular marginal one at apex . . . . . . *nuncius*

a^2. Elytra somewhat ampliate behind, a post-median sinuate patch and an apical marginal one . . . . . *quadrisignatus*

a^1. Elytra oblong, six yellow lines or spots and an apical marginal patch *signatus*

C^2. Elytra without marginal yellow band or yellow spots. Costae of elytra carinate, moderately punctate laterally . . . . *coeruleopennis*

C^1. Elytra with a yellow marginal band.

a^3. Head and prothorax somewhat sparsely punctate; marginal band extending to the edge of the 9th interval . . . *leucoristus*

a^2. Head and prothorax very closely and deeply punctate, a broad lateral yellowish band extending from the margin to the 5th interval *cribricollis*

a^1. Head and prothorax deeply but moderately sparsely punctate.

b^3. Lateral band extending from the margin to the 6th interval *limbipennis*

b^2. Lateral band extending to the 4th interval . . *marginipennis*

b^1. Lateral band invading the apical part for a sixth of the length *sulcipennis*

B^2. Prothorax cordiform, as broad as long.

a^5. Elytra with a broad lateral band extending to the 5th interval; prothorax without a yellow border . . . . *limbatus*

a^4. Prothorax with a narrow yellow border. Elytra with a narrow lateral marginal band ascending the intervals in the apical part. *simulatus*

a^3. Yellow lateral band extending as far as the 6th interval and emitting a short median spur; an elongate spot on the supra-apical part of the 4th interval . . . . *coscinioderus*

a^2. Lateral band extending to the 5th stria in the anterior part, impinging there on the 3rd, reduced thence to the margin; a supra-apical patch on the 3rd to 4th intervals . . . . *notabilis*

a^1. Lateral band extending to the 6th stria in the anterior part, dilated there in the middle to the 4th interval, narrowed thence to the 8th interval and the margin; an ovate yellow supra-apical patch on the 3rd to 5th intervals . . . . *commistus*

B^1. Prothorax narrow, cordiform, but longer than broad.

a^2. Elytra without a yellow outer margin. Head and thorax coppery; elytra dark blue-black. . . . . *tenuicollis*

a^1. Elytra with a yellow outer margin.

b^3. Elytra glabrous, the yellow marginal band extending on the next interval.

c^2. Intervals costate . . . . *angustatus*

c^1. Intervals plane . . . . *solivagus*

b^2. Elytra glabrous, intervals impunctate, the yellow band extending on the next interval, and expanding on the apical part for a short distance . . . . *cylindricollis*

b^1. Elytra briefly pubescent, intervals closely punctate, the yellow band extending on the next interval, and not expanding on the apical part *consobrinus*

A^1. Prothorax broad, sub-trapezoidal or trapezoidal.

B^3. Prothorax slightly sinuate laterally above the base; the outer angle in a line with the 6th elytral costa.

C^2. Elytra with no yellow outer margin. Elytra with a posterior yellow patch on each elytron. Head and prothorax bright green, the latter very broad. Elytra bright violaceous blue . . . . . . *raffrayi*

C^1. Elytra with no yellow patch nor a yellow outer margin. Head and prothorax bright coppery red.

a^2. Antennae and legs reddish yellow.

b^4. Elytra with the costae carinate . . . . . . *laetus*

b^3. Elytra with the costae very highly carinate . . . . *hypocritus*

b^2. Elytra black . . . . *comes*

b^1. Elytra bright cyaneous, outer margin blue. . . . *cyanipennis*

a^1. Antennae and legs red, elytra black, prothorax impunctate *levicollis*

B^2. Pronotum very little sinuate laterally above the base.

C^3. Pronotum smooth on the disk, costae of elytra impunctate.

a^2. Elytra with a yellow posterior patch on each side.

b^2. Elytra with an ovate quadrate yellow patch on each side *bipustulatus*

b^1. Elytra with a long quadrate yellow patch reaching the apex.

c^2. Pronotum closely punctate . . . . . . *controversus*

c^1. Pronotum less closely punctate . . . . . . *conformis*

a^1. Elytra without a yellow patch.

b^3. Head and pronotum, and elytra bright green, costae sharp . *simplex*

b^2. Head and pronotum bright green, elytra olive green, costae tectiform *robustus*

b^1. Head and pronotum bright green, elytra violaceous, costae very little raised . . . . *validicornis*

C^2. Pronotum and costae closely punctate, dark metallic green above, outer margin of elytra blue, an apical marginal yellow border. . *mashunus*

C^1. Prothorax and elytra with a yellow outer margin.

a^2. Elytra with an interior and posterior discoidal yellow patch on each side *dussaulti*

a^1. Elytra without yellow patches.

b^5. Prothorax vaguely punctate, elytra nearly glabrous, intervals smooth *capicola*

b^4. Prothorax very closely punctate over the whole disk, elytra very briefly pubescent, intervals aciculate punctate . . . *superstes*

b^3. Prothorax not closely punctate in the anterior part, densely pubescent, intervals finely aciculate . . . . . *marginicollis*

b^2. Prothorax very closely punctate, alternate costae sharply carinate, with the ridge smooth, the others closely aciculate punctate . *costipennis*

b^1. Elytra pubescent, with a broad yellow outer margin extending to the 6th costa. Size large . . . . *senegalensis*

B^1. Pronotum trapezoidal, outer angle in a line with the 7th costa.

C^2. Body black, elytra costate, glabrous.

a^4. Pronotum impunctate.

b^2. The 3 basal joints of antenna fuscous black, legs black . . *cham*

b^1. Whole antenna and the legs red . . . . . *natalensis*

a^3. Pronotum punctate . . . . *trapezicollis*

a^2. Pronotum aciculate, elytra pubescent.

b^2. Costae little raised and closely aciculate . . . . *dichrous*

b^1. Costae raised and closely punctate . . . . . *piceus*

a^1. Pronotum variolose punctate, antennae black . . . *dohrni*

C^1. Body metallic bluish green. Pronotum closely aciculate, the 2 basal joints of antenna red, the rest fuscous or black . . . . *consors*

Chlaenius sulcatus Fab.

Descr. Cat., p. 494.

Locality.—Cape (Port Elizabeth) ; Mozambique (Beira).

Chlaenius quadrimaculatus Boh.

Descr. Cat., p. 494, pl. x, fig. 2.

Locality.—North Rhodesia (Broken Hill) ; Mozambique (Manica).

Chlaenius myops Gor.

Descr. Cat., p. 495.

In this species, which seems to have a very wide distribution (Senegambia, Abyssinia, Ovampoland, and Natal), the normal shape of the posterior yellow patch is obliquely ovate, reaching from the 3rd to the 8th interval. In the var. *erikssoni* this patch is reduced to a small streak on the 4th interval, and a longer one on the 6th, briefly connected by a very small one, often indistinct on the 5th. This form, which I named *C. erikssoni,* occurs in Ovampoland and in Natal. In two typical examples from Transvaal—Barberton and White River—the posterior patch is broadly ovate, and reaches from the 3rd to the 8th interval.

Locality.—Cape (Basutoland); Transvaal (Lydenburg, Pretoria, Waterkloof, Johannesburg); Natal (Umvoti).

Chlaenius cupreocinctus Reich.

Voy. Gal. Abyss. Ent., p. 266, pl. xvi, f. 5.

Syn: *tigreanus* Roth., Wiegm. Arch., 1851, i, p. 116.

Head and prothorax bright coppery, with greenish sheen especially on the sides, elytra sub-metallic black, outer margin bright green; antennae black with the 3 basal joints red; palpi and legs red, apical joints of the former broadly securiform; head very closely aciculate; prothorax sub-trapeziform, a little ampliate laterally in the middle, and only a little attenuate thence to the outer angle, less so in the male than in the female, but not sinuate there, the base broader than apex, closely, deeply, and regularly punctate all over; elytra oblong, the intervals sharply carinate except the juxtasutural one, and each with a distinct row of punctures on each side of the carination; the bright green lateral band invades the base of the 8th stria, but is restricted thence to the margin interval.

Length, 13½–17 mm.; width, 5–8 mm.

Locality.—South Rhodesia (Umtali). Originally recorded from Abyssinia.

Chlaenius caffer Boh.

Descr. Cat., p. 514.

This handsome species is now recorded from Salisbury, in Southern Rhodesia.

Chlaenius hacquardi Chaud.

Coleopt. Novit., 1883, p. 30.

Very dark metallic blue; antennae very long, fuscous black with the first joint red; legs black with the base of the femora flavescent; head deeply and very closely pitted; prothorax very slender, ampliate rounded laterally, narrower towards the base than towards the apex, a little longer than at the greater median width ; the basal angle in a line with the 4th costa of the elytra, the latter also slender, and very briefly pubescent, very slightly ampliated from the median part, sharply costate, the costae deeply and closely punctate, at about the median part a transverse pale yellow band extending from the 3rd to the 7th interval ; underside cyaneous blue ; tarsi, especially the intermediate and posterior ones, very long ; interior femora with a minute tooth or spine at the base underneath.

Length, 10 mm. ; width, 3¼ mm.

This very slender species is retained by Chaudoir in the group *Vertagus*, but beyond the general facies there is hardly any distinctive character differentiating it from other slender forms of the genus. It is very closely allied to *C. buqueti* Dej. from Senegambia, and was first discovered at Mhonda (? German East Africa).

Locality.—South Rhodesia (Umtali).

Chlaenius rebellis sp. n.

Head and prothorax cyaneous, moderately shiny, elytra very dark blue, with a quadrate yellow post-median patch extending on intervals 3–6 ; underside bright blue ; antennae black with the basal joint red ; palpi rufescent, broadly securiform at tip ; legs rufo-flavous with the knees, the anterior tibiae, and the apical part of the others fuscous black. Of slender shape (Orybatus) ; head not aciculate in the centre, and aciculate on the sides and neck ; prothorax a little longer than broad, regularly ampliate rounded laterally, and in a line with the 5th stria of the elytra, broad at base as at apex, with the hind angles not prominent, closely and deeply, somewhat rugosely, punctate ; elytra very briefly pubescent, oblong, finely striate punctate, with the intervals plane (♀) ; half-way between middle and apex is a transverse quadrate yellow patch extending on the 3rd to the 6th interval, thorax and pectus deeply punctate ; abdomen smooth in the median part.

Length, 12½ mm. ; width, 5 mm.

The colour of the legs is like that of *C. perspicillaris*, but the latter differs considerably in the shape of the thorax, and of the much less broadly securiform palps.

Locality.—Natal (Durban) ; Transvaal (Waterberg) ; Mozambique (Rikatla).

Chlaenius dissidens sp. n.

Bluish green, moderately shiny, very briefly greyish pubescent above; palpi, the three basal joints of the antennae, and the legs red yellowish; prothorax narrowly but distinctly edged with yellow; elytra each with a yellow patch in the posterior part. Head smooth, vaguely plicate laterally behind; the last joint of the palpi, instead of being securiform and truncate at apex, are broadly dilated but diamond-shaped; prothorax narrow, only slightly ampliate laterally, as broad at the base as at the apex, the basal angle not pronounced but in a line with the 4th interval of the elytra, deeply, closely, and somewhat rugosely punctate; elytra oblong, parallel, finely punctate striate, intervals plane, very closely punctate, the yellow patch equidistant from the centre and apex is sub-quadrate, slightly sloping and extending on the 3rd to the 6th interval but sometimes extending partly on the 7th, then the patch is no longer sub-quadrate; underside deeply punctate, abdomen smooth except on the sides, which are less deeply punctate than the pectus.

Distinguished by the shape of the palpi and also by the yellow border of the prothorax, which is slightly less ampliate laterally in the male than in the other species of the group; the elytra are parallel laterally.

Length, 12 mm.; width, 4 mm.

Locality.—Southern Rhodesia (Umtali).

Chlaenius marleyi sp. n.

Bluish green on the head and thorax, darker blue on the elytra, very briefly pubescent above; only the first basal joint of the antennae red; palpi somewhat infuscate, legs reddish yellow; elytra each with a yellow patch in the posterior part. Head as in the preceding species, palpi of the same shape; prothorax longer than broad, ampliate laterally in the middle but distinctly narrower past the median part than in the anterior, and even slightly sinuate towards the base, which is slightly wider than the apex, with the basal angle made more prominent by the lateral sinuation and in a line with the 4th stria of the elytra, very closely, deeply, and somewhat rugosely punctate, the outer margin concolorous; elytra oblong but slightly ampliated past the middle, finely striate punctate, with the intervals distinctly convex (♂) and very closely punctate, the yellow patch is ovate, and extends on the 3rd to the 6th interval; underside as in previous species.

This species, which, like *C. dissidens*, is easily recognised by the diamond-shaped ultimate joint of the palpi, differs also from the above named by the shape of the prothorax, which, instead of being almost sub-cylindrical, is, if not strongly sinuate, at least narrower in the posterior than in the anterior part. The elytra are also less parallel.

Length, 10 mm.; width, 3¾ mm.

Locality.—Natal (Durban, H. W. Bell-Marley).

Chlaenius bohemani Chaud.

Descr. Cat., p. 496.

Locality.—Transvaal (Rustenburg, Lydenburg); Southern Rhodesia (Umtali).

Chlaenius fasciger Chaud.

Descr. Cat., p. 496, pl. x, f. 3.

Locality.—Free State (Bothaville); S. Rhodesia (Salisbury).

Chlaenius fenestratus Chaud.

Descr. Cat., p. 496.

In my Descriptive Catalogue I described this species as a variety of *C. bohemani* Chaud., but now that I have examined more material of both sexes, I find that Chaudoir was right in considering it as a species different from the latter.

The prothorax is broader, the last joint of the palpi are not as broadly securiform in either sex; the yellow patch on the elytra is much less ovate and extends from the 3rd to the 8th interval, and is longer on the 5th than on the others. The three basal joints of antennae are red instead of the basal one only, as in *C. bohemani*.

Length, 12–12½ mm.; width, 4–4¾ mm.

Locality.—Natal (Kranzkop, Malvern); Transvaal (Lydenburg); S. Rhodesia (Salisbury); Mozambique (Lourenço Marquez, Beira).

Chlaenius cribellatus Chaud.

Descr. Cat., p. 497.

Very closely allied to the preceding species; the shape of the prothorax is nearly the same but slightly broader, so that it is as long as broad; the colour of the elytra is black and opaque instead of metallic green or blue, and they are a little broader, the yellow patch is the same, the very closely aciculate the intervals are plane (♂) instead of being somewhat convex; and only the first two joints of the antennae are reddish instead of the three.

Length, 12 mm.; width, 5 mm.

Originally described from Lake N'Gami. I consider as being this species a ♂ from the Transvaal (Shilouvane).

Chlaenius ovambo Pér.

Descr. Cat., p. 499.

Locality.—Southern Rhodesia (Salisbury, Plumtree).

Chlaenius perspicillaris Erichs.

Descr. Cat., p. 497.

Locality.—Cape (Mossel Bay, Uitenhage, Douglas, Prieska, Hopetown, Kimberley, Griquatown, Bechuanaland); Transvaal (Platrivier in Waterberg, Grimm's Mine in Lydenburg); S. Rhodesia (Bulawayo, Salisbury); Damaraland (Tsumeb, Grootfontein); also Angola and Somaliland.

Chlaenius conformis Dej.

Suppl. Descr. Cat., 1898, p. 353, pl. xi, f. 7.

Locality.—Natal (Durban); Senna in Mozambique.

Chlaenius capensis Gory.

Descr. Cat., p. 514.

Locality.—Cape (Port Elizabeth, Uitenhage, Graham's Town, Willowmore); Natal (Durban); Transvaal (Pretoria, Lydenburg); Bechuanaland (Enkoken); Mozambique (Beira and Rikatla).

Chlaenius vitticollis Boh.

Descr. Cat., p. 499.

Locality.—Orange Free State (Smithfield); Transvaal (Pretoria, Lydenburg); S. Rhodesia (Salisbury).

Chlaenius pulchellus Boh.

Descr. Cat., p. 500.

C. fraternus merges so often in *C. pulchellus* that it must be considered as only a variety.

Locality.—Natal (Durban); S. Rhodesia (Salisbury, Arcturus); Bindura, Plumtree, Matoppos; Transvaal (Strydpoort, Pietersburg, Lydenburg, Pretoria); N. Rhodesia (Pemba).

Chlaenius fulvicollis Chaud.

Descr. Cat., p. 498.

Syn: *C. mimus* Pér.

Descr. Cat., p. 499.

C. mimus is only a variety of *C. fulvicollis*, in which the yellow markings of the elytra are not very apparent.

Locality.—Cape (Uitenhage, Graham's Town); Transvaal (Pretoria, Roodeplaats); S. Rhodesia (Umtali, Ungusan on Kokwe River); Mozambique (Beira).

Chlaenius verecundus Pér.

Descr. Cat., p. 501, pl. x, f. 5.

Locality.—Transvaal (Pretoria, Woodbush Villa in Zontpansberg); S. Rhodesia (Salisbury, Umtali).

In this species the yellow markings are very variable. Thus in an example from S. Rhodesia (Salisbury) (♀), and in another from Durban (♂), a somewhat larger specimen, the discoidal patches are altogether absent. In an example (♀) from Delagoa (Rikatla) this patch, and also the apical one, are so faint as to escape detection, while in another example (♂) from the same locality there are no traces whatever of yellow markings. It is this variety which I considered at first to be identical with *C. nitidiceps* Dej., which is smaller, less ampliated behind in the ♀, and has not been recorded hitherto but from the western part of the Cape of Good Hope.

Chlaenius enonensis Pér.

Suppl. Descr. Cat., p. 353.

Locality.—S. Rhodesia (Salisbury).

Chlaenius infersus sp. n.

Head and prothorax very dark green, labrum, antennae, and legs rufescent, last joint of palpi only slightly dilated at apex, more cylindrical there than the other species of the group; head aciculate but impunctate in the centre; prothorax gradually ampliate laterally but only very slightly sinuate towards the base, where it is also only very slightly wider than at the apex, the posterior angle in a line with the 5th stria of elytra, length nearly equal to the width, closely and deeply punctured and clothed like the elytra with a dense, flavous pubescence; elytra parallel (♂), narrowly striate, the intervals plane but slightly convex in the anterior part, and very closely and somewhat roughly punctate; anterior tibiae (♂) with a very small basal tooth underneath, underside with the normal sculpture.

Length, 12 mm.; width, 4½ mm.

While the shape of the palpi approximate more to that of the second group of the genus, the general facies and that of the prothorax is more that of the *C. communimacula* and *nitidiceps* group.

Locality.—Cape Colony (Hanover).

Chlaenius zanzibaricus Chaud.

Descr. Cat., p. 491, pl. x, fig. 1.

Locality.—Mozambique (Beira).

Chlaenius lugens Chaud.

Descr. Cat., p. 492.

Locality.—Zanzibar, Madagascar, Angola.

Chlaenius quadrisignatus Boh.

Descr. Cat., p. 501.

Locality.—S. Rhodesia (Plumtree, Salisbury, Umtali); Mozambique (Beira).

Some examples from the above localities are of larger size than the type. It is probably to similar ones from Mamboia that Bates proposed the name of *C. mamboianus*.

Chlaenius signatus Boh.

Descr. Cat., p. 502.

Locality.—Transvaal (Pietersburg, Leydsdorp); S. Rhodesia (Umtali, Plumtree, Umvuma).

Chlaenius modestus Boh.

Descr. Cat., p. 508.

Locality.—Cape (Kimberley); Free State (Hoopstad); Natal (Kranz Kloof).

Chlaenius cribricollis Dej.

Descr. Cat., p. 505.

Locality.—Cape (Beaufort West, Willowmore, Uitenhage); S. Rhodesia (Sebakwe, Salisbury, Umtali); Mozambique (Beira).

Chlaenius simulatus Boh.

Descr. Cat., p. 506.

Locality.—Cape (Uitenhage).

Chlaenius coscinioderus Chaud.

Descr. Cat., p. 504.

Locality.—Cape (Port Elizabeth).

Chlaenius notabilis Lafert.

Descr. Cat., p. 503.

Locality.—Free State (Bothaville).

Chlaenius commistus Pér.

Descr. Cat., p. 503.

Locality.—Free State (Bothaville); Transvaal (Pretoria, Waterberg); S. Rhodesia (Khami); Mozambique (Lourenço Marquez).

Chlaenius tenuicollis Fabr.

Descr. Cat., p. 508.

Locality.—Cape (Port Elizabeth, Graham's Town, Uitenhage).

Chlaenius angustatus Dej.

Descr. Cat., p. 509.

Locality.—S. Rhodesia (Matoppos); Mozambique (Beira).
Recorded also from Zanzibar and Pemba Island.

Chlaenius solivagus sp. n.

An extremely close ally to *C. angustatus* Dej. The colour is the same, the narrow elongated thorax also, but the intervals of the elytra are altogether plane even at the base (♂); the lateral yellow margin is a little broader and the apical one distinctly so.

Length, 10–11 mm.; width, $4\frac{1}{9}$ mm.

Locality.—S. Rhodesia (Kokwe River, Umtali); Mozambique (Beira).

Chlaenius cylindricollis Dej.

Descr. Cat., p. 509.

Locality.—Cape (Zululand, M'fongosi); Transvaal (Pretoria, Lydenburg, Johannesburg, Great Letaba); Bechuanaland (Enkoken); S. Rhodesia (Salisbury, Kokwe River); Mozambique (Beira).

Recorded from Pemba Island (Zanzibar).

Chlaenius laetus Fabr.

Descr. Cat., p. 511.

Locality.—Cape (Prieska, Port Elizabeth, Uitenhage, Graham's Town).

Chlaenius comes Pér.

Descr. Cat., p. 512.

Locality.—S. Rhodesia (Salisbury).

Chlaenius levicollis sp. n.

Head and prothorax red, shining, elytra black with a faint cyaneous tinge, and the outer marginal interval dark green; antennae, palpi, and legs red; head non-aciculate, prothorax ampliate rounded laterally, slightly narrowed towards the base, but broad, not sinuate, and as broad as long, with the basal angles in a line with the 6th stria, disk without any puncture; elytra elongate, oblong, narrowly punctate striate, the intervals highly costate.

In general appearance and livery it much resembles *C. comes*, but the antennae and legs are red instead of fuscous black, the supra marginal interval is greenish instead of dull black, and the prothorax is quite impunctate.

Length, 16 mm.; width, 6 mm.

Locality.—S. Rhodesia (Salisbury).

Chlaenius cyanipennis Boh.

Descr. Cat., p. 512.

Locality.—Cape (Uitenhage).

Chlaenius bipustulatus Boh.

Descr. Cat., p. 498.

Locality.—Cape (Bedford); Transvaal (Johannesburg, Pretoria, Lydenburg); Free State (Smithfield, Bothaville); S. Rhodesia (Sebakwe, Victoria, Salisbury); Mozambique (Inhambane); N.-E. Damaraland.

It is recorded also from Abyssinia and Zanzibar.

Chlaenius controversus sp. n.

In shape, size, and colour it is like *C. bipustulatus* Boh., but it differs in the following characters: the punctures on the prothorax are deeper, and equally spread on the disk, while in *C. bipustulatus* the median part is almost impunctate from the interior part to the fore point of the discoidal sulci; the intervals on the elytra are quite plane from about a fifth of the length to the apex (♀), whereas in *bipustulatus* (♀) they are raised, slightly convex, and more distinctly shagreened than in *C. controversus*, the posterior yellow patch instead of being sub-quadrate extends from the 3rd stria to the 8th, and is continued there and merges into an apical marginal moderately broad band, thus forming a conspicuous crescent-shaped band somewhat similar to that of *C. conformis*, which is, however, plainly distinct from *C. controversus*.

Length, 14 mm.; width, 6 mm.

Locality.—S. Rhodesia (Macloutsi River); Mozambique (Beira).

In general appearance and livery this species may have been mistaken for *C. conformis*, ranging from Senegal to Natal.

Chlaenius simplex Wied.

Descr. Cat., p. 507.

Locality.—Natal (Howick).

Chlaenius robustus Boh.

Descr. Cat., p. 512.

Locality.—S. Rhodesia (Umtali).

Chlaenius validicornis Boh.

Descr. Cat., p. 516.

Locality.—S. Rhodesia (Plumtree, Salisbury, Insiza).

Chlaenius mashunus Pér.

Descr. Cat., p. 516.

Syn : *C. pronus* Pér., Ann. S. Afr. Mus., vol. iii, 1904, p. 185.

Dark bronze-green with the elytra darker, briefly pubescent, both the prothorax and elytra with a blue marginal sheen, the latter with an apical narrow yellow margin ; palpi, antennae, and legs flavescent ; head strongly and closely punctate ; prothorax nearly sub-parallel, broader at base than at apex, with the basal angle in line with the 7th stria of the elytra, very deeply and very closely punctate ; elytra very little broader than the base of the prothorax, oblong, narrowly punctate, striate with the intervals only moderately plane and covered with deep, contiguous moderately fine punctures.

The shape of the prothorax approximates that of the *natalensis piceus* group, but the elytra are more oblong.

Length, 10–10½ mm. ; width, 5–5¼ mm.

Locality.—S. Rhodesia (Salisbury, Umtali).

Chlaenius dussaulti Duf.

Descr. Cat., p. 515.

Locality.—Transvaal (Pienaar's River, Fountaingrove, Wonderboom in Pretoria, Marico, Zoutpansberg) ; S. Rhodesia (Insiza, Enkeldoorn, Salisbury).

Chlaenius capicola Chaud.

Descr. Cat., p. 512.

Syn : *C. mendax* Chaud.

Descr. Cat., p. 513.

Syn : *C. lacustris*, Chaud.

Descr. Cat., p. 513.

The examples from the north-eastern parts of the South African area are more brilliant green than those occurring in the south-western, and also occasionally larger (*mendax*). *C. lacustris*, of which I have a co-type given me by the Genoa Museum, cannot be separated from *C. capicola* ; the straightness of the pronotum of *C. lacustris* varies in examples from the same locality.

Locality.—Cape (Uitenhage, Bedford); Natal (Durban); Zululand (M'fongosi); S. Rhodesia (Saw Mills, Queque, Kokwe River, Salisbury, Umtali); Mozambique (Rikatla, Beira).

Chlaenius superstes sp. n.

Allied to *C. marginipennis*, but larger and with the whole disk of the prothorax deeply and very closely punctured.

Olive metallic green with the head and prothorax brighter green above, underside cyaneous, legs, palpi, antennae, and labrum yellow, a yellow band extending in the outer margin and the last interval, and from the shoulder to about a third of the length covering also the 8th; in the posterior part the apices of the 6th, 7th, and 8th intervals are yellow; upper side very briefly pubescent; head and prothorax as in *C. senegalensis*, but both are very closely punctured all over, and the edge of the outer margin is flavescent; the oblong elytra are finely punctate striate, with the intervals slightly convex in the male, planer in the female, and very closely aciculate punctate.

Length, 14½–15 mm.; width, 6–7 mm.

Locality.—S. Rhodesia (Sebakwe, Salisbury).

Chlaenius costipennis Boh.

Descr. Cat., p. 515.

Locality.—Transvaal (Lydenburg).

Chlaenius senegalensis Dej.

Descr. Cat., p. 513.

Locality.—S. Rhodesia (Insiza, Bulawayo, Plumtree).

Chlaenius cham Chaud.

Descr. Cat., p. 518, pl. x, f. 4.

I have seen an example from Natal the upper part of which is wholly bright bronze.

Locality.—Natal (Harding); Mozambique (Beira).

Chlaenius aculeatus Pér.

Descr. Cat., p. 518.

This species may prove to be a diminutive example of *C. natalensis*. Locality.—Cape (Uitenhage).

Chlaenius dichrous Wied.

Descr. Cat., p. 517.

Locality.—Cape (Port Elizabeth).

Chlaenius piceus Chaud.

Descr. Cat., p. 517.

Locality.—Cape (Graham's Town, Uitenhage).

Chlaenius dohrni Bert.

Descr. Cat., p. 493.

Recorded also from the island of Zanzibar, Dar-es-Salaam, White Nile, and Nubia.

Gen. ECTENOGNATHUS Murr.

Descr. Cat., p. 521.

Ectenognathus dispar Pér.

Descr. Cat., p. 521.

Locality.—Zambesi River.

Gen. UMTALIUS gen. n.

I propose this genus for a singular form of Chlaeniid, which I described as a *Chlaenius* (*C. epigraphidus*), not only on account of its singular livery, which greatly resembles that of the species of the Panagaeid genus *Epigraphus*, but also because of the shape of the labial palpi, which are very broadly bell-shaped, and not obliquely truncate, while the maxillary are cylindrical. Although the two examples I examined are females, it will probably be found that the three basal joints of the tarsi are not dilated in the male.

Umtalius epigraphidus Pér.

Suppl. Descr. Cat., p. 355, pl. xi, f. 9.

Gen. PARACHLAENIUS Kobb.

Suppl. Descr. Cat., p. 356.

Parachlaenius pretorianus n. sp.

Chestnut brown, with the tarsi somewhat darker; head finely aciculate, and plicate longitudinally above the eyes, but the central frontal part is smooth; prothorax as broad as long, slightly arcuate outwardly from the projecting apex to about the middle, and inwardly thence to the sharp basal angle; it bears a few very scattered punctures, the outer margin is sharply reflexed, the basal impressions of the disk are very plane, and the median longitudinal sulcus plane, elytra paralleled with the humeral angles rounded, hardly convex except in the posterior part, finely striate punctate with the intervals plane, very closely aciculate, and densely pubescent, the pubescence erect; underside closely punctate and pubescent; legs also pubescent.

This species differs from *P. singularis*, which is a much larger species, by the finer and more closely set punctures in the intervals of the elytra, as well as by the coloration.

Length, 14 mm.; width, 5 mm.

Locality.—Transvaal (Pretoria).

Gen. RHOPALOMELUS Chaud.

Descr. Cat., p. 569.

Suppl. Descr. Cat., p. 356.

Rhopalomelus angusticollis Boh.

Descr. Cat., p. 569, pl. x, fig. 6.

Locality.—Transvaal (Louis Trichardt); S. Rhodesia (Bulawayo).

Gen. CALLISTOMIMUS Chaud.

Descr. Cat., p. 522.

Key to the Species.

A². Head dark blue or metallic green.

B². The transverse yellow patches on the elytra not connected with the outer margin.

C². Elytra with an anterior and posterior patch on each side; basal joints of antennae black . . . . *quadripustulatus*

C^1. Elytra with an anterior and posterior patch, and a median and apical juxta-sutural spots on each side; the two basal joints of antennae flavescent *amoenus*

B^1. Anterior lateral band on the elytra connected with the outer margin; the three basal joints of antennae flavescent.

C^4. Base of prothorax deeply incised below the posterior angle; elytra with a rounded sutural patch at the apex, besides the two lateral ones *sexpustulatus*

C^3. Anterior lateral patch connected along the margin with the humeral angle, posterior one small, an apical sutural patch . . . *elegans*

C^2. Anterior lateral patch much more sinuate than the posterior one, and both connected with the suture; each elytron has besides a post-median juxta-sutural dot and a small apical sutural patch . . . *caffer*

C^1. Outer margin of the elytra narrowly flavescent, anterior lateral margin hardly sinuate, juxta-sutural dot wanting, or nearly so, postical patch hardly noticeable . . . . *gratus*

A^1. Head and prothorax red.

B^3. Elytra with nine small yellowish dots on each side . . . *insuetus*

B^2. Elytra with one juxta-sutural post-median spot, a lateral sinuate band reaching from near the suture to the outer margin, and two dots on the posterior part of the 3rd interval . . . . . *guttatus*

B^1. Elytra with greenish longitudinal markings along the first seven intervals, and a transverse, somewhat zigzagged post-median somewhat evanescent band . . . . *placeus*

Callistomimus amoenus Pér.

Descr. Cat., p. 524.

Locality.—Cape (Uitenhage); Free State (Bothaville).

Callistomimus sexpustulatus Boh.

Descr. Cat., p. 524.

Locality.—S. Rhodesia (Salisbury).

Callistomimus elegans Boh.

Descr. Cat., p. 525.

Locality.—Free State (Vredeford Road); S. Rhodesia (Salisbury).

Callistomimus caffer Boh.

Descr. Cat., p. 525.

Locality.—S. Rhodesia (Plumtree).

Group OOIDINI.

Descr. Cat., p. 527.

Key to the Genera.

A². Head with one seta over the eye. Penultimate joint of labial palpi glabrous.
B². Labrum with three setae in the anterior margin . . *Systolocranius*
B¹. Labrum with six setae in the anterior margin . . . . *Oodes*
A¹. Head with two setae over the eyes. Penultimate joint of the labial palpi with two setae. Labrum with six setae . . . . *Melanodes*

Gen. SYSTOLOCRANIUS Chaud.

Descr. Cat., p. 527.

Systolocranius ampliolatus sp. n.

Black, shiny above on the underside; the palpi and antennae piceous, joints 4–11 fulvo pubescent; head and prothorax impunctate and similar in shape to that of *S. validus*; the elytra instead of being parallel as in the above-mentioned species are gradually ampliated laterally from near the base to the third part of the length, where they are one-fifth wider than at the base; they are finely punctate striate, with the 1st to the 3rd intervals nearly plane, and the others gradually tectiform, especially in the posterior part; there is only one distinct puncture on the 3rd interval half-way between the middle and apex, and not in a line with the puncture on the opposite side; underside sub-iridescent.

Closely allied to *S. goryi* Laf. from Senegambia, and recorded also from Uganda, Guinea, and erroneously from the Cape. The lateral attenuation of the prothorax begins from the median part, and is therefore more noticeable than in *S. goryi*; the lateral post-humeral sinuation of the elytra is very distinct, whereas in *S. goryi* there is none, and in the latter the striae are more distinctly punctate and the intervals more convex or more sharply costate, even in the female. Moreover, there are two punctures on the 3rd interval in *S. goryi*, and only a posterior one in *S. ampliolatus*. In general appearance this species greatly resembles *Chlaenius cham*, but can be at once distinguished by the absence of the puncture on the outer angle of the base of the prothorax.

Length, 20–22 mm.; width, 8 mm.

Locality.—S. Rhodesia (Umtali); Mozambique (Beira).

Systolocranius validus Klug.

Descr. Cat., p. 528.

Locality.—Cape (Transkei); Natal (Kranzkop, Durban); East Africa (Luippoldkette, Tabora).

Gen. OODES Bon.

Descr. Cat., p. 529.

A^2. Prosternum produced in a short aculeate process.
B^2. Prothorax with a distinct supra-basal impression on each side.
C^2. Upper side black. Two punctures on 3rd interval.
  a^2. Body ampliate behind . . . . *conspicuus*
  a^1. Body elongate, elytra sub-parallel.
  b^2. Body and legs black, size large . . . . *senegalensis*
  b^1. Margin of prothorax and legs piceous red, size smaller . *natalensis*
C^1. Upper side bronze green . . . . *similatus*
B^1. Prothorax with no distinct supra-basal impression.
C^2. Body large, no puncture on 3rd interval . . . . . . *lenis*
C^1. Body small, two punctures on 3rd interval . . . *palpalis, nanus*
A^1. Prosternum produced in a long spine. No distinct supra-basal impression.
B^3. Striae of elytra distinct, 6th stria not curving inwards near the base *levicollis*
B^2. Striae of elytra very fine, 6th stria curving plainly inwards near the base *angolensis*
B^1. Striae of elytra evanescent or obliterated, except the juxta-sutural *substriatus*

Oodes conspicuus Pér.

Descr. Cat., p. 530.

Locality.—Natal (Durban); Transvaal (Nylström, Barberton, Zoutpansberg).

Oodes senegalensis Dej.

Spec. V., p. 672.

Differs mainly from *O. natalensis* by its much broader size, it being twice the width of the other; the prothorax is therefore proportionally less attenuate in the anterior part, and more distinctly wider at apex than the base, and the basal impressions are not so clearly line-like; the elytra have the same shape, and, being wider, the punctation of the striae is more conspicuous, and the six striae on each side are equally complete; the underside and legs are denser black in all my examples (♂♂), and the former less iridescent than in *O. natalensis.*

Length, 10–12 mm.; width, 5½–6 mm.

Locality.—Natal (Malvern, Durban); S. Rhodesia (Salisbury, Umtali).

Oodes similatus Boh.

Descr. Cat., p. 531.

Locality.—Transvaal (Parys); S. Rhodesia (Bulawayo, Salisbury).

Oodes substriatus.

Descr. Cat., p. 533.

Locality.—Transvaal (Shilouvane); S. Rhodesia (Salisbury).

Gen. MELANODES, Chaud.

Descr. Cat., p. 553.

The insects included in this genus have a superficial resemblance to that of some species of *Abacetus* of the tribe *Feroniuni,* and likewise they have two supra-orbital setae, thus differing from the *Chlaenini* and *Oodini,* but they are, however, separated by several distinct characters, such as the position of the 2nd antennal joint, which is set in the axis of the basal joint instead of the outer part, the shape of the joints of the anterior tarsi of the male, etc.

The South African species are very closely allied to each other, and only distinguishable by comparison.

Key to the Species.

A^2.	Pronotum with the posterior angles acute	*intermedius*
B^2.	Lateral sinuation from middle to base slight	*ebeninus*
B^1.	Lateral sinuation from middle to base pronounced.	
C^2.	Basal angle of pronotum in a line with the 6th stria of elytra	*rectangulus*
C^1.	Basal angle of pronotum in a line with the 7th stria	*proximus*
A^1.	Pronotum with the hind angles blunt and rounded	*aberrans*

Melanodes ebeninus Erichs.

Descr. Cat., p. 534.

Syn: *M. incertus* Pér., Ann. S. Afr. Mus., vol. v, 1908, p. 289.

The difference between *M. incertus,* described from one example, and *M. ebeninus* does not seem to me now to be such as to consider the two as distinct species.

Locality.—Natal (Durban).

Melanodes rectangulus Chaud.

Descr. Cat., p. 534.

Syn: *M. pugnator* Pér., Descr. Cat. Suppl., p. 358.

Locality.—Natal (Howick, Durban); S. Rhodesia (Umtali).

Melanodes proximus sp. n.

Shiny black with a slight iridescence, antennae and legs dark piceous; easily recognised from the other South African species by the size of the pronotum, which is broader than long, distinctly attenuate, rounded in the first anterior part, but is very much less so from below the centre to the sharp basal angle; the lateral fold above the sulcus is slightly broader behind than in the other species, somewhat in the manner of some species of *Abacetus*; the elytra are wider in proportion to the width of the pronotum, and have the usual structure of the other species of the genus. Underside iridescent; pectus closely and somewhat deeply punctate. One female.

Length, 12 mm.; width, 5 mm.

Locality.—S. Rhodesia (Umtali).

Tribe DITOMINI.

Antennae inserted under a frontal ridge; frons with one supra-orbital seta; pronotum with one seta anteriorly, or none, cordiform or elongate cordate; body pedunculate; elytra depressed, occasionally pubescent, normally rounded at apex; legs moderately robust; anterior tibiae deeply incised, the spurs very distant from each other; tarsi simple in both sexes.

This tribe has never been considered to be homogeneous. Thus *Coscinia*, which I removed from it, has two supra-orbital setae, and *Melaenus*, one of the three genera I include, *Bascanus*, and its close ally *Bascanidius*, differ in facies from *Melaenus*, and while they both have only one supra-orbital seta, there seems to be none on the pronotum and only one in *Melaenus*. *Bascanus* and *Bascanidius* seem to be restricted to the Cape. *Melaenus* occurs in Senegambia, and has not been hitherto recorded from Central Africa.

Key to the Genera.

A^2. Antennae long, 4 basal joints glabrous . . . . . *Melaenus*

A^1. Antennae moderately long, joints thick, all joints except the basal one pubescent.

B^2. Mandibles long, porrect, labrum elongate . . . . *Bascanus*

B^1. Mandibles short, not porrect, labrum very short, deeply emarginate *Bascanidius*

Gen. Melaenus Dej.

Spec., v, p. 481.

Mentum short, with a simple median tooth as long as the sides, the latter rounded at tip; ligula obtuse, slightly shorter than the paraglossae ; apical labial joint ovate, that of the maxillary thickened, broadly truncate at tip ; antennae very long, somewhat slender, the 4 basal joints glabrous, the others four times as long as broad ; maxillae robust, arcuate, labrum moderately long, transverse, head with a very distinct supra-orbital ridge and one supra-orbital seta set in front of the eye ; prothorax cupuliform, much constricted at the base, and with one seta at the fifth part of the length ; body pedunculate, scutellum distinct, elytra parallel, normally rounded body behind, quite depressed, epiplural fold very broad at the base ; legs moderately robust ; tarsi somewhat long, ciliate beneath, claw large, simple.

Melaenus elegans Dej.

Spec., v, p. 481.

Lacordaire's Genera, pl. vi, f. 2.

Black, opaque, palps piceous brown, legs piceous ; antennae long, the 4 basal joints glabrous, piceous, the others clothed with a dense flavescent pubescence ; head deeply and coarsely pitted, neck distinct, eyes projecting, with a long conspicuous ridge ; pronotum broadly cordiform, almost cupulate, strongly narrowed at the base, where the angle is sharp and sometimes bi-denticulate, the outer margin acute, depressed on the disk, deeply and coarsely and moderately closely pitted, but less so in the vicinity of the deep, distinct median longitudinal line ; scutellum small ; body pedunculate ; elytra with a distinct angular on each side of body, the peduncle, which makes the shoulder sloping, parallel for two-thirds of the length, gradually rounded thence, much depressed, deeply striate, the striae very strongly and closely seriate punctate ; the supra-lateral intervals are slightly convex, and the lateral carinate ; pectus very deeply and somewhat closely punctate ; legs smooth, glabrous ; tarsi thickly ciliate underneath.

Length, 7–8½ mm. ; width, 3¾–4 mm.

Locality.—S. Rhodesia (Umtali).

I can see no difference whatever with the Rhodesian example and those from Upper Senegal.

Gen. BASCANUS Pér.

Descr. Cat., p. 540.

In my description of this genus I indicated the last joint of maxillary and labial palpi as long and very fusiform ; these joints, remarkable, as well as the penultimate ones, for their great length, are fusiform outwardly only, the inner part being very obliquely truncate in both sexes for about half their length, but not quite securiform; there is one supra-orbital seta set at the back of the eye, and I cannot detect any on the pronotal outer margin.

BASCANIDIUS gen. n.

This genus differs from *Bascanus* in the shorter mandibles, the very short and broadly incised labrum, the less slender pronotum and the more parallel elytra. The last palpal joints are a little more robust and a little more obliquely truncate inwardly (♂).

Bascanidius dissidens Pér.

Bascanus dissidens Pér., Ann. S. Afr. Mus., vol. v, 1905, p. 290.

TRIBE LICININI.

Descr. Cat., p. 525.

Characteristic of the Licinidae, as represented in South Africa, are the brevity of the clypeus, the long, deeply cleft labrum, and the shape of the mandibles, which are usually blunt at apex on one side and sometimes on both, when they are deeply scooped inwardly; the maxillae are armed with sharp robust spines. There are two supra-orbital setae—a lateral nearly median one on the pronotum, and a puncture, occasionally very indistinct, at the posterior angle of the latter; there is a puncture on the 3rd interval of elytra; in the male the 3 first joints of the anterior tarsi are spongy underneath, the 2 basal joints being triangularly dilated, but the 3rd is occasionally slightly transverse. The palaearctic genus *Licinus* has not to my knowledge been met with in the Ethiopian Region.

Key to the Genera.

A². A lateral seta on the pronotum and a distinct puncture at the basal angle. Last joint of palpi slightly fusiform but truncately obtuse at tip *Rhembus*

A¹. A lateral seta on the pronotum, no distinct puncture at the basal angle. Last joint of palpi fusiform and sharply acuminate at tip. Antennae very long.

B². Mandibles short, curved, blunt at tip . . . . . *Badister*

B¹. Mandibles straight, both scooped inwardly at tip . . . *Atrotus*

Gen. RHEMBUS Lah.

Descr. Cat., p. 536.

In my description (*loc. cit.*) I have erroneously stated that there are two lateral setae on the pronotum; the basal seta is wanting in the only two examples I have as yet seen, but the puncture is fairly distinct.

Gen. BADISTER Clairv.

Descr. Cat., p. 536.

Badister promontorii Pér.

Descr. Cat., p. 536.

I am not sure that the locality, Zambesi, ascribed to this species is valid.

Gen. ATROTUS Pér.

Descr. Cat., p. 583.

Atrotus forcipatus Pér.

Descr. Cat., p. 583.

Locality.—Cape (Cape Town, Stellenbosch).

Atrotus luror sp. n.

Body flavescent, but darker in the median dorsal part, slightly iridescent. Closely allied to *A. forcipatus*, and might at first sight be considered as an immature form of the latter, but it is smaller, and the shape of the pronotum is slightly different, being also ampliate rounded laterally, but slightly more towards the median part than in *A. forcipatus*, and although this difference is slight, yet the pronotum is less obliquely attenuate laterally towards the posterior angle, and the base is about the same width as the apex; the elytra are fairly deeply striate with the intervals slightly convex, 3rd interval with a slightly ante-median puncture.

Length, 5½ mm.; width, 2⅘ mm.

Locality.—Natal (Malvern).

I have seen only one example.

TRIBE MASOREINI.

Descr. Cat., p. 542.

Key to the Genera.

A². Mentum without a median tooth. Apical part of prosternum without hairs.
B². Body sub-pedunculate . . . . *Aephnidius*
B¹. Prothorax fitting against the elytra . . . . . *Anaulacus*
A¹. Mentum with a median tooth.
B². Claws not denticulate. Antennae moderately long. Joints not transverse. Apical part of prosternum with a fascicle of hairs . . . *Somoplatus*
B¹. Claws weakly denticulate. Antennae very short. Joints 5–10 transverse. Apical part of prosternum without a fascicle of hairs . . *Microus*

Gen. AEPHNIDIUS MacLeay.

Aephnidius madagascariensis Chaud.

Descr. Cat., p. 542.

Locality.—Natal (Malvern); Transvaal (Johannesburg); S. Rhodesia (Salisbury); Mozambique (Beira, Licitinia); Mossamedes (Mossame).

Gen. ANAULACUS MacLeay.

Descr. Cat., p. 543.

Anaulacus carinipennis sp. n.

Rusty red, with the elytra sub-piceous silky and opaque; the shape and sculpture of the head and pronotum are as in *A. capensis*, but the pronotum is slightly broader, also impunctate and moderately shiny; the elytra are likewise slightly broader, not striate, the suture is carinulate, and at a short distance from it is a highly carinate dorsal ridge, beginning at a distance from the base and reaching to about the same distance from the apex as it does from the base, and another and very much shorter in the median part.

Length, 5 mm.; width, 3 mm.

Locality.—Cape (Port Elizabeth).

Anaulacus pallidus sp. n.

Flavescent, with the prothorax slightly brick-red, a little more robust than the preceding species, but the shape and sculpture of the head and prothorax are alike; in the elytra, however, the suture is more highly carinate; the first dorsal carina is not as acute as in *A. carinipennis*, and reaches the base; the second one is only feebly indicated and more pronounced from the base to about the median part, but disappears beyond it, and there are traces of a very faint striate on each side of the median carina.

I have seen so far one example only of *A. carinipennis* and *A. pallidus*, but I am satisfied that the latter is not an immature example of the former.

Length, 5 mm. ; width, 3½ mm.

Locality.—Cape (Cape Town).

Gen. SOMOPLATUS Dej.

Descr. Cat., p. 543.

Somoplatus substriatus Dej.

Descr. Cat., p. 544.

Locality.—Cape (Port Alfred, Vryburg) ; Free State (Bothaville) ; Transvaal (Pietersburg).

Gen. MICROUS Chaud.

Bull. Soc. Imp. Mosc., 1876, p. 8.

Buccal organs of *Somoplatus*, and likewise with a tooth in the mentum, but at once differentiated from all the South African species of *Masoreini* by the great brevity of the antennae, which do not reach the base of the pronotum, and the moniliform shape of the intermediate joints—the second is globular and shorter than the third ; the general facies is short, quite ovate ; the fore tibiae are plurispinose outwardly, and slightly emarginate after the second outer spine ; the mandibles are flat ; the short head is deeply set in the pronotum, which is short and very transverse, and plainly arcuate on each side of the base, and having a very weak median longitudinal impressed line ; the elytra are more ovate than in *Anaulacus*, the suture is tectiform, the striae are very indistinct, but some seriate punctures are somewhat visible along the marginal fold ; the apical part is not truncate ; prosternum rounded and not hairy in front, wedge-shaped behind.

Microus mocquerysi Chaud.

Bull. Soc. Imp. Mosc., 1876, p. 9.

Rev. and Mag. Zool., 1878, p. 146.

Antennae, palpi, mandibles, labrum, legs, and underside brownish red, upper side black, prosternum shiny, elytra sericeous, opaque ;

head smooth, impunctate, the first setigerous orbital puncture very conspicuous; pronotum quite smooth, shiny, with the median line distinct; the outer margin narrowly brownish red; elytra void, fitting exactly against the pronotum, but deeply impressed on each side of the scutellum, moderately convex for two-thirds of the length, and with the suture tectiform for nearly four-fifths of the length; indistinctly impunctate striate, but with the stria above the marginal fold more distinctly and visibly punctate; anterior tibiae with 5–6 outer spines, the two anterior ones separated by a slight emargination from the following ones; metasternal episterna longer than wide and very narrow at apex.

Length, 4–4½ mm.

Locality.—Natal (Durban).

This species was first captured at Rouen in France. Raffray found it at Pemba Island (Zanzibar). The two examples I examined were captured at Durban by Dr. H. Martin.

TRIBE DISPHAERICINI.

The two genera *Spanus* and *Disphaericus* should be placed in a sub-family of their own, not in the *Stomini*, in which they were first included and with which they agree only relatively, nor in the *Panagaenini*, where they are placed by Kolbe. With some members of the first sub-family the only thing they appear to have in common is a pedunculate thorax. The elongation of the head recalls that of some *Panagaeini*, but the difference in the shape of the mandibles, distinctly toothed in the median part, the clavate fore femora, the fore tibiae without outer terminal spur or row of spines, and the inner spur very short and incurved, the series and deposition of deep puncture on the supra-epipleural interval, the short joints of the fore and intermediate tarsi, as well as the glabrous body, approximate them to the *Pterostichini* rather than to the *Panagaeini*. There are two supra-orbital setae.

Key to the Genera.

A². Last papal joint very broadly triangular; elytra very highly pluri-costate *Disphaericus*

A¹. Last palpal joint of an elongate bell-shape; elytra smooth, non-costate *Spanus*

Gen. DISPHAERICUS Waterh.

Descr. Cat., p. 537.

Disphaericus natalicus Westw.

(*D. natalensis*), Descr. Cat., p. 538.

The description I gave (*loc. cit.*) was made from a partly mutilated specimen. The species differs from both *S. ebeninus* and *S. concinnus* in having a supra-lateral impunctate line—like stria obliterated in the fourth anterior part, the space between this line and the supra-epipleural stria slightly tectiform and overlapping the latter; the shape of the prothorax is less elongated than in *S. concinnus* and less ampliated than in *S. ebeninus*; the juxta-sutural stria reaches from base to apex, and the punctures are deeper than in any of the two above-named species; the apical puncture is conspicuously large.

Cape (no exact locality).

Gen. SPANUS Westw.

Descr. Cat., p. 537.

Spanus concinnus sp. n.

Smooth, very shiny; antennae, palpi, and legs rufescent; closely allied to *S. ebeninus* Chaud.; differs mostly in the shape of the pronotum, which is one-third longer than broad, and elongate with the sides straight, whereas in *S. ebeninus* it is well ampliate, being nearly as broad as long, and slightly wider across the base than across the apex; the shape and sculpture of the elytra are the same, but the juxta-sutural punctate stria reaches only to the rounding of the posterior declivity instead of the apex, and there is a conspicuous puncture close to, but of course outside, the supra-epipleural series of punctures, which are, however, deeper in *S. ebeninus*, in which species the puncture is less distinctly outside the series. Underside smooth, the setigerous punctures of the abdominal series deep; intermediate tarsi nearly as much dilated as the anterior in the male, all densely spongy underneath, hind ones densely ciliate.

Length, 6 mm.; width, 2 mm.

Locality.—Cape (Fort Beaufort).

TRIBE PTEROSTICHINI.

Descr. Cat., p. 544.

The South African species are included into three groups: *Drimostomides*, *Abacetides*, *Pterostichides*. The first two groups are homogeneous, the third is not, the facies of the species being often strongly dissimilar; but in spite of differences in detail there is little doubt that they all belong to one and the same group, which I have, however, divided into two sections. The first includes eight genera of a pure African type, and one the facies of which has some resemblance to palaearctic forms. It is in the second, however, that this resemblance is carried to a greater degree of similarity. In my Descriptive Catalogue I included a number of species in the genus *Pterostichus* (olim *Feronia*), being, I think, justified by finding in the South African species many characters which are characteristic of the palaearctic species. Tschitschérine has, however, proposed a new division of the South African species, founding some new genera and several subgenera. Some of his new genera I have now adopted; the others I have raised to genera, and I have added two, admitting, however, that the characters ascribed to most of them are not always of important generic value; but this arrangement makes identification easier.

Moreover, there is a very important point in adopting this new division. So far as we know, none of the forms included in that Section II have yet been met with outside South Africa, the Transvaal being the most northern limit. One species described by Fairmaire as an *Omaseus*, a genus well represented in the Palaearctic Region, *O. relexicollis*, from Usagara, Central Africa, is pronounced by Tschitschérine to be an *Abacetus*, a genus extremely rich in species in Africa. This absence of intermediate forms is very striking. If it proves to be true, it makes it difficult to explain satisfactorily the retention of general facies and something more in localities so very remote, except on the hypothesis of convergence to a type or facies moulded by environment or habit.

The South African species inhabit both plain and mountain. Two species, *C. chalcostoma* and *C. captatrix*, are found in the same locality, the first in the plain, the other on the mountain slopes from 800 to 1000 feet. *Mosuta alticola* has been met at an altitude of 8500 feet; it is therefore possible that alpine Central African forms of the same type may still be met, thus bridging the gap.

Drimostomides.

Mentum with a sharp median tooth; antennae short, joint 2 normal, 4–10 subquadrate; joints of posterior tarsi not sulcate; no scutellary striae. Anterior tarsi with a few minute spines outwardly . . . Gen. *Stomonaxus*

Abacetides.

Mentum with a broad triangular median tooth; antennae long, joint 2 set on the outer side of the axis of the first; 4–10 not quadrate; joints of hind tarsi long, sulcate or not; no scutellary striae . . . Gen. *Abacetus*

Pterostichides.

Section I.

A^2. Mentum with a median simple tooth.
B^2. No scutellary stria. Antennae reaching the base of the prothorax or a little further.
C^2. No setigerous puncture on 3rd interval of elytra. Basal joint of hind tarsi not longer than the three following. Elytra as broad as the thorax.
  a^2. Tibiae not grooved inwardly. Anterior tibiae with obsolete spines except the apical.
  b^2. Prosternal projection not prolonged; upper edge of abdominal segments foveolate punctate . . . . . . *Abatus*
  b^1. Prosternal projection prolonged, grooved; upper edge of abdominal segments not foveolate punctate . . . . *Cyrtomoscelis*
  a^1. Tibiae grooved inwardly. Anterior tibiae distinctly spinose outwardly. Basal joint of hind tarsi grooved.
  b^2. Body elongate oblong, upper edge of the four abdominal segments not foveolate punctate . . . . *Berea*
  b^1. Body broadly oblong; upper edge of the four abdominal segments foveolate punctate . . . . *Inkosa*
C^1. A setigerous puncture on the 3rd interval of elytra.
  a^2. Body somewhat broad and short; elytra with an apical rufescent patch . . . . *Celioschesis*
  a^1. Body almost navicular; elytra with reddish posterior patches; no puncture on 3rd interval . . . . *Metaxys*
B^1. A scutellary stria.
C^2. Body broad, depressed; antennae very short . . . *Rhathymnus*
C^1. Antennae reaching beyond the shoulders . . . . . *Exocus*
A^1. Mentum without median tooth. A scutellary stria . . . *Atimus*

Section II.

A^2. Mentum with a bifid tooth.
B^2. Metasternal projection glabrous; the first four joints of anterior tarsi dilated in the male; tibiae not canaliculate. Episterna somewhat broad and not much elongated. First stria of elytra diverging at the base, a more or less distinct scutellary striole.
C^2. Body black, shiny, elytra moderately convex.
  a^4. Pronotum rounded laterally behind, not as broad at base as at apex; shoulders rounded.
  b^2. Intermediate tibiae incurved in both sexes, broadly flattened at apex in the male; the three basal segments of abdomen with a transverse sulcus . . . . *Camptoscelis*

b^1. Intermediate tibiae simple; the three basal segments of abdomen simple except in *C. laetans* . . . . . *Cophosomorpha*
a^3. Pronotum very slightly sinuate laterally behind, but nearly as broad at base as at apex; shoulders sharp, even dentate.
b^2. No strong ridge above the eye . . . . . . *Sthenocranion*
b^1. A strong ridge above the eye . . . . *Barnardia*
a^2. Pronotum nearly parallel or slightly attenuate towards the base but not sinuate there; 7th interval of elytra not highly raised in anterior part . . . . *Macquena*
a^1. Prothorax sub-cordate; shoulders slightly rounded. The three apical segments of abdomen with a transverse sulcus at the base *Mosuta*
C^1. Body black opaque, elytra depressed; pronotum quite straight; 8th stria of elytra obliterated; intervals highly carinate . . . *Wahlbergia*
B^1. Metasternal projection pluri-setose at apex; the first four joints of anterior tarsi simple in both sexes. Intervals plane, 7th raised; elytra depressed near the base.
C^2. Episterna broad . . . . *Teratotarsa*
C^1. Episterna elongated . . . . *Ogmophora*
A^1. Mentum with a sharp median tooth; elytra metallic, no sutural stria *Chalcochroma*

DRIMOSTOMIDES.

Gen. Stomonaxus Motsch.

Drimostoma Pér., nec. Dej.

Descr. Cat., p. 556.

In this genus the fore tibiae have two or three more or less distinct sutural spines in addition to the terminal; the hind tibiae are grooved on each side, but have no spine on the upper side.

Key to the Species.

A^2. Prothorax a little broader than long, distinctly sinuate laterally in the posterior part.
B^2. Elytra distinctly costate.
C^2. Size larger . . . . *laticollis*
C^1. Size smaller . . . . *natalensis*
B^1. Elytra not distinctly costate . . . . *spurius*
A^1. Prothorax one-third broader than long, not sinuate laterally, posterior part *amaroides*

Stomonaxus laticollis Boh.

Descr. Cat., p. 556.

Locality.—Cape (Uitenhage, Dunbrody, Transkei, Kentani).

Stomonaxus natalensis Pér.

Descr. Cat., p. 556.

I have not obtained any other example of this species than the type which reproduces on a much lesser scale the form *laticollis*, but the intervals are convex, not hardly convex as I stated probably through a lapse of the pen.

Stomonaxus spurius sp. n.

Chestnut brown with the head darker, and occasionally piceous. It is very closely allied to *S. laticollis*, but is a little larger; the shape of the pronotum is the same, but the intervals of the elytra are not convex in the discoidal part and not as highly costate laterally; the punctures of the striae are also less plain, although in the last-named species they are not conspicuous, and the antennae are slightly longer.

Length, 7½–8 mm.; width, 3½ mm.

Locality.—Natal (Durban, Malvern).

ABACETIDES.

Gen. Abacetus Dej.

Descr. Cat., p. 545.

In my description of the genus I omitted to mention the peculiar insertion of the second antennal joint, which is set on the outer axis instead of the centre of the first, and which is thus a peculiar characteristic of the group. A second omission is the presence of a setigerous puncture on the 3rd interval of the elytra, and the absence of a prescutellary stria or striole. The puncture on the 3rd interval of elytra is not situated always slightly past the median part; it may be slightly ante-median (*inopinus, evulsus,* etc.) or long past the middle (*obtusus*); only in one case (*shilouvanus*) is it completely absent. I have seen one example only of this species, but it is not always distinct in certain examples of the same species.

The genus is very poorly represented in the western part of the Union, where rains are more occasional than in the eastern part, which is rich in species, and examples are numerous.

A calligraphic error, p. 545 of the Descriptive Catalogue, puts "*Martaban*" in South America. The error is of course obvious. The genus has no representative in America, and it is not certain that true *Abacetus* occur in Australia.

Key to the Species.

A^2. Prothorax and elytra glabrous.
B^3. Intermediate and posterior tarsi trisulcate.
C^2. Inner spur of anterior tibiae bi- or trifid.
  a^2. Striae of elytra punctate . . . . *palustris*
  a^1. Striae of elytra impunctate.
  b^2. Antennae normally slender.
  c^2. Body larger ; intervals of elytra tectiform . . . . *auspicatus*
  c^1. Body smaller ; intervals of elytra less tectiform . . . *nigrinus*
  b^1. Antennae conspicuously thickened.
  c^2. Base punctate, antennae and legs black . . . . *crassicornis*
  c^1. Base impunctate, antennae and legs red . . . . *proximus*
C^1. Inner spur of anterior tibiae simple, or very slightly bifid.
  a^2. Antennal joints of normal thickness.
  b^3. Prothorax cordate ; intervals of elytra raised, tectiform . *mashunus*
  b^2. Prothorax sub-cordate ; intervals of elytra moderately raised on the disk . . . . *emeritus*
  b^1. Prothorax very little sinuate above the hind angle.
  c^2. Anterior tibial spur slightly bifid ; puncture on 3rd interval of elytra strong . . . . *vexator*
  c^1. Anterior tibial spur simple ; puncture on 3rd interval faint *propinquus* sp. n. *
  a^1. Antennal joints thickened.
  b^3. Prothorax cordiform ; intervals of elytra sharply tectiform . *lautus*
  b^2. Prothorax ampliate rounded laterally, not sinuate past the middle. Elytra iridescent.
  c^2. Antennae fuscous, legs black, tarsi fuscous . . . . *pavoninus*
  c^1. Antennae red, legs and tarsi red.
  d^2. Prothorax entirely black . . . . *dilucidus*
  c^1. Prothorax with a rufescent border . . . . . . *nitens*
  b^1. Prothorax parallel from the median part to the basal angle.
  c^2. Sides slightly sinuate behind. Antennae and legs fuscous or black *lucidulus*
  c^1. Sides straight.
  d^2. Antennae and legs red . . . . *parallelicollis*
  d^1. Legs black . . . . *alienus*
B^2. Tarsi sulcate outwardly only, sometimes very faintly.
C^4. Prothorax sub-cordate, not sinuate laterally behind. Base of prothorax hardly narrower than apex, legs piceous.
  a^2. Larger size . . . . *servitulus*
  a^1. Smaller size . . . . *delagoensis*
C^3. Prothorax cordate, not sinuate laterally behind, base narrower than apex, legs red . . . . *malvernensis*
C^2. Prothorax strongly cordate, sinuate laterally behind. Antennal joints other than the three basal ones black ; legs red ; elytra iridescent . *vertagus*

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* The full description of this species was not found among the late Dr. Péringuey's papers.—[Ed.]

C^1. Prothorax broadly cordate, strongly ampliate anteriorly.
a^3. Antennal joints fuscous ; legs piceous ; elytra black . . *congruens*
a^2. Antennal joints all red ; legs red ; elytra black, iridescent . *optimus*
a^1. Antennal joints black ; legs piceo-aeneous ; elytra dark bronze *diversus*

B^1. Tarsi not sulcate.
C^2. Prothorax sub-orbicular, or not sinuate laterally behind. Intervals of elytra quite plane. Frontal sulci neither deep nor strongly arcuate.
a^3. Black, shiny, with a metallic tinge ; basal joint of antennae and legs red.
b^2. Basal part of prothorax impunctate . . . . . . *minutus*
c^2. Basal angle sharp . . . . *minutus*
c^1. Basal angle rounded . . . . *fraternus*
b^1. Basal part of prothorax punctate . . . . . *perplexus*
a^2. Black, with a bronze tinge ; antennae wholly black.
b^2. Legs black ; base of prothorax punctate ; elytra not transversely impressed on the disk . . . . *agilis*
b^1. Legs piceous red ; base of prothorax impunctate ; elytra transversely impressed on the disk . . . . *chalceus*
a^1. Black, shiny ; legs black, tarsi rufescent ; antennal joints except basal ones black ; base of prothorax punctate . . . *concors*

C^1. Prothorax strongly cordate. Frontal sulci deep and strongly arcuate.
a^2. Species non-metallic.
b^5. Elytra black ; tarsi rufescent . . . . . . *metalensis*
b^4. Elytra iridescent ; antennae fuscous ; legs red . . . *conformis*
b^3. Elytra black ; antennae and legs bright red . . . *obtusus*
b^2. Elytra not depressed.
c^2. Base of pronotum impunctate.
d^3. Pronotum moderately sinuate laterally . . . . *alacer*
d^2. Pronotum distinctly sinuate laterally . . . . *nanus*
d^1. Pronotum wider and more cordiform . . . . *umtalensis*
c^1. Base of pronotum punctate . . . . . . *inopinus*
b^1. Elytra depressed. Facies very elongate ; elytra chestnut brown *trechoides*

a^1. Upper side with a metallic sheen.
b^4. Pronotum cordiform, plainly sinuate laterally towards the base.
c^5. Upper side shiny black with a faint metallic sheen.
d^2. Antennae and legs black . . . . *aterrimus*
d^1. Antennae fuscous ; femora black . . . . *shilouvanus*
c^4. Upper side metallic green or bronze.
d^3. Base of pronotum aciculate ; antennae and legs fuscous red *perturbator*
d^2. Base of pronotum not aciculate, antennae and legs rufescent *nanniscus, cursor*
d^1. Base of pronotum closely punctate ; antennae and legs rufescent *pygmaeus*
c^3. Upper side metallic green, prothorax cordate . . . *majorinus*
c^2. Upper side chalceous or greenish black, base of pronotum closely punctate.

d^2. Elytra elongate, intervals plane. Femora fuscous, tibiae rufescent *zambesianus*

d^1. Elytra less elongate, intervals convex, surface dark metallic green, whole legs reddish . . . . *mashunus*

c^1. Surface only slightly metallic ; legs fuscous . . . *discrepans*

b^3. Pronotum not strongly cordiform. Intervals of elytra plane *evulsus*

b^2. Pronotum very little sinuate laterally. Base aciculate, intervals somewhat plane. . . . . *effulgens*

b^1. Pronotum broader than long . . . . . . *pumilus*

A^1. Pronotum and elytra pilose.

B^2. Pronotum strongly cordate, convex and narrowly attenuate behind ; prothorax and alternate interval of elytra with setigerous pits . *setulosus*

B^1. Pronotum moderately cordate, and bearing like the elytra a lateral fringe of setae ; the striae of the latter plane, deeply and regularly punctate *pilosellus*

Abacetus pavoninus Pér.

Descr. Cat., I. Suppl., p. 360.

Locality.—Natal (Durban, Malvern) ; Transvaal (Shilouvane) ; S. Rhodesia (Umtali).

Abacetus dilucidus Pér.

Ann. S. Afr. Mus., vol. iii, 1904, p. 192.

Syn : *A. jucundulus* Pér., *loc. cit.*, p. 193.

Syn : *A. mimus* Pér., *loc. cit.*, p. 193.

Abacetus nitens Tschits.

Hor. Soc. Ent. Ross., vol. xxxii, 1898, p. 430.

Locality.—S. Rhodesia (Sebakwe).

This species, which was described from Boma, in the Congo, is represented by a type in the S.A. Museum Collection.

Abacetus parallelicollis sp. n.

Piceous red, elytra with blue, highly iridescent elytra. Easily distinguished from its South African congeners of the same group by the nearly parallel prothorax, which is only slightly attenuate rounded laterally anteriorly for about a sixth of the length ; the base is indistinctly plicate in the centre, the intervals of the oblong elytra are plane ; (♀) the underside is piceous red, and with the abdomen darker ;

the legs, palpi, and labrum are red, the antennae fuscous with the exception of the basal joint, which is red.

Length, 9 mm. ; width, 3¾ mm.

Locality.—S. Rhodesia (Umtali).

Abacetus alienus nom. nov.

Syn : *A. diversus* Pér. (nom. preocc.).

Ann. S. Afr. Mus., vol. iii, 1904, p. 191.

Abacetus delagoensis sp. n.

A very close ally of *servitulus*, but much smaller, and the prothorax is more ampliated laterally in proportion to the size, and more rounded towards the posterior angle ; it is black, with the elytra sub-iridescent, with the intervals plane ; the three basal joints of antennae and the legs are piceous red, the palpi rufescent.

Length, 6½ mm. ; width, 2¾ mm.

Locality.—S. Rhodesia (Salisbury) ; Mozambique (Rikatla).

Abacetus optimus Pér.

Ann. S. Afr. Mus., vol. iii, 1904, p. 195.

Syn : *A. clarus* Pér., *loc. cit.*, p. 196.

Abacetus congruens sp. n.

Allied to the preceding species, but more slender ; the prothorax is also greatly ampliated in the centre, but the posterior part from slightly past the middle is very distinctly attenuate, thence towards the base, and has thus a more broadly cordiform appearance, although the supra-basal sinuation is not much marked ; the elytra are narrower and therefore more parallel than in *A. optimus* ; the antennae are fuscous or even black, except the first joint, which is red, and the legs are either black or dark piceous, and the elytra are deep black with occasionally a faint iridescent sheen.

Length, 6½ mm. ; width, 3 mm.

Locality.—S. Rhodesia (Umtali).

Abacetus fraternus Tschits.

Hor. Soc. Ent. Ross., vol. xxxii, 1898, p. 539.

Dark bronze, shiny, the tibiae with a faint rufous tinge. Very closely allied to *A. minutus*, but the metallic sheen is more bronzy and approximates that of *A. chalceus*, and the shape of the pronotum is as in the last-named species—that is to say, the basal angle is rounded and not aculeate as in *A. minutus*; the base has no punctures. From *A. chalceus* it differs in the less ampliate pronotum and the plane, not transversely impressed, intervals of the elytra.

Length, 8 mm.; width, 3 mm.

Locality.—Cape of Good Hope.

Abacetus perplexus Pér.

Descr. Cat., p. 552.

Syn: *A. aenescens* Pér., *loc. cit.*, p. 553.

Syn: *A. chalcites* Pér., *loc. cit.*, p. 552.

Locality.—Cape (Worcester).

Abacetus concors sp. n.

Black, shiny, palpi and the three basal antennal joints red, legs piceous red; the antennae are long, with the median joints plainly thickened; the prothorax is ampliate rounded laterally for two-thirds of the length, thence gradually narrowed towards the basal angle, but not sinuate, the base being slightly wider than the apex, and deeply punctate at the centre; the elytra are of an oblong shape, but with hardly any sloping at the humeral part; the intervals are plainly convex (♀).

A difficult species to place. The thorax is less cordate than in the *A. natalensis* group, and, moreover, the base is deeply punctate.

Length, 5½ mm.; width, 2¼ mm.

Locality.—Natal (Durban).

Abacetus natalensis Chaud.

Descr. Cat., p. 549.

Locality.—Natal (Malvern); S. Rhodesia (Salisbury, Umtali).

Abacetus conformis Pér.

Descr. Cat., p. 607.

Black, with the antennae fuscous, and the legs dark red, sometimes fuscous, tarsi rufescent; elytra shining black with a slight iridescence. Closely related to *A. natalensis*, but differs in the shape of the prothorax, which is not quite so broad in proportion to the width of the elytra, being slightly narrower at its widest part than at the humeral part of the elytra, whereas in *A. natalensis* it is nearly equal; the elytra are slightly iridescent, whereas in *A. natalensis* they are intensely black, and the intervals of the elytra are plainly less carinate.

Length, 6½–7 mm.; width, 3 mm.

Locality.—Cape Colony (Uitenhage).

Abacetus umtalensis sp. n.

A very close ally to *A. nanus.* The prothorax, however, is plainly more cordiform, and wider in the anterior part, the colour is rufo-piceous, as in *A. nanus.*

Length, 5 mm.; width, 2 mm.

Locality.—S. Rhodesia (Umtali).

Abacetus pygmaeus, Boh.

Descr. Cat., p. 550.

A. viarius Pér., Descr. Cat. Suppl., p. 359.

Locality.—Cape (Caledon, Kimberley); Natal (Lower Umkomaas River).

Abacetus majorinus Pér.

Descr. Cat., p. 550.

Locality.—Cape (Uitenhage); Natal (Lower Umkomaas, Tugela River).

My example from Uitenhage is much more numerously punctured along the base than the type.

Abacetus zambesianus sp. n.

Greenish on the upper side with a chalceous tinge; the first and second antennal joints are red, the second and third, however, being somewhat fuscous; the remainder are deeply infuscate; the prothorax is plainly cordate, and as broad as long, the base is deeply and somewhat closely punctate, the punctures being deep; the oblong elytra are somewhat longer in proportion than the other species of this group, striate with the intervals plane; femora fuscous, tibiae and tarsi slight flavescent.

The elongate form of this species approximates somewhat that of *A. agilis* Pér., which, however, belongs to another and well-defined group. I have seen one example only from Pemba, on the northern side of the Zambesi. This might appear to be an extraneous locality, but it is not, as it comes within the limit of the South African fauna, viz. south of the 15th parallel south.

Length, 6 mm. ; width, 2½ mm.

Locality.—Rhodesia (Pemba).

Abacetus mashunus sp. n.

Dark blue, but sometimes light bronze on the upper side ; the legs sub-piceous red ; the prothorax is broadly cordate, strongly narrowed at the base, which is strongly punctate, but sometimes sparingly so ; the intervals of the elytra are sub-tectiform or moderately plane, according to the sex.

It differs from *A. descrepans*, a near ally, by the much more cordate prothorax, and also the colour of the upper part.

Length, 4¼ mm. ; width, 2¼ mm.

Locality.—S. Rhodesia (Salisbury, Sebakwe).

Abacetus pumilus, Boh.

Descr. Cat., p. 551.

Locality.—S. Rhodesia (Sebakwe).

Abacetus setulosus, Chaud.

Rev. and Mag. Zool., 1878, p. 136.

A very distinct species. Black, shiny, with the palpi and legs flavous ; the three basal joints of the antennae are red, the three following fuscous, and the others pale flavescent ; the prothorax is convex, globose, but narrowly attenuate towards the base, sprinkled with coarse punctures bearing each a long hair ; the base is roughly punctate, the elytra are twice as broad at the shoulders as the narrow base of the prothorax, with the angles moderately rounded, very deeply striate, with the intervals carinate and alternately roughly punctate on one side, the punctures bearing a long rigid seta.

Length, 4½ mm. ; width, 2 mm.

Locality.—N. Rhodesia (Pemba) ; S. Rhodesia (Sebakwe, Salisbury, Umtali).

Described originally from Zanzibar (Pemba Island).

Abacetus pilosellus Pér.

Descr. Cat., I. Suppl., p. 361.

Syn : *A. jubatulus* Pér., Ann. S. Afr. Mus., vol. iii, 1904, p. 200.

Syn : *A. pilosulus* Pér., *loc. cit.*, p. 200.

PTEROSTICHIDES. I.

Gen. CYRTOMOSCELIS Chaud.

Descr. Cat., p. 559.

It would appear that I have mixed *Cyrtomoscelis natalensis* Chaud. with *Argutor trivialis* Boh. I do not remember having seen the former, whereas I have compared my specimens with authenticated examples of the latter, which I now place in a new genus which differs from *Cyrtomoscelis* in having the outer margin of the anterior tibiae distinctly pluri-spinose and the hind tarsal joint grooved, whereas in *Cyrtomoscelis* the fore tibiae are spineless and the hind tibiae and tarsi are not grooved.

Cyrtomoscelis natalensis Chaud.

Bull. Mosc., 1873, p. 63.

My description of *C. trivialis* applies to this species. It was, in fact, made from an example of *Cyrtomoscelis*; the pronotum is much more parallel than in *Berea caffra*, owing to it being less attenuate and hardly rounded in the anterior lateral part; the longitudinal central line is so faint as to be difficult of detection.

In general appearance it closely resembles *B. caffra*, but is at once differentiated by the absence of spines on the upper side of the fore and hind tibiae; the latter are also not grooved, nor is the basal joint of the hind tarsi.

BEREA, gen. n.

Cyrtomoscelis Pér., nec. Chaud.

Descr. Cat., p. 558.

To my description may be added the following: Anterior tibiae with strong spines outwardly, intermediate numerously; posterior sparsely spinose, the four upper spines in the latter set on a slightly dentate projection, forming on the edge of the slightly arcuate tibia a sort of sinuation; the hind tibiae are grooved inwardly, and the basal joint of the hind tarsi is also grooved.

Berea trivialis Boh.

Descr. Cat., p. 559.

In some examples the median impressed line on the prosternum is ill-defined.

Berea caffer sp. n.

Piceous, with the elytra darker and slightly iridescent; more elongate than *B. trivialis* and less oblong; the sculpture is identical, but the pronotum being more elongate is nearly as long as broad, is attenuate forward laterally for a shorter distance, and thus appears more parallel; the median longitudinal impressed line is sometimes difficult to detect; the elytra are also more elongate and narrower in proportion than in *C. trivialis*; the rest as in the former.

Length, 8 mm.; width, 3¼ mm.

Locality.—Cape (Transkei, Kentani).

INKOSA gen. n.

The sculpture of the head is very different from that of *Berea*; the frontal sulci are very deep and broad, and edged laterally by a highly raised border; the lateral puncture of the labrum is very deep and broad; the head, owing to shortness of neck, is deeply set in the pronotum, which is much broader in the anterior part in spite of the prominence of the eyes; the pronotum has a distinctly sulcate border, and is as broad at the base as the elytra; the legs are as in *Berea*.

Inkosa latiuscula sp. n.

Black, shiny, not iridescent; palpi and antennae rufescent; legs reddish brown. Head with the frontal impressions broad, deep, and edged with a high border above the eyes; lateral puncture of the labrum fossate; prothorax twice as broad as the head at apex, attenuate rounded laterally to about the median part, where it is twice as broad as long, straight thence to the base, where it is as wide or nearly so as the shoulders; outer margin sharp, reflexed, no scutellary striole; elytra with the intervals only moderately convex on the disk, the convexity more pronounced laterally, especially in the ♂; the striae apparently impunctate, underside smooth, the three abdominal segments with a series of deep punctures along the anterior border; anterior and intermediate tibiae spinose outwardly, posterior a little arcuate, grooved, and with a few spines. Easily recognised by its ampliate facies.

Length, 7 mm.; width, 4 mm.

Locality.—Natal (Kranzkop).

Gen. CELIOSCHESIS Tschits.

Hor. Soc. Ent. Ross., vol. xxxii, 1898, p. 93.

Head small, eyes convex and projecting ; frontal sulci well defined ; outer border of the intermediary (especially) and posterior tibiae set with more numerous spinules ; first joint of the intermediate and hind tarsi much elongated, yet not longer than the three following ; first joint of the anterior tarsi (dilated) almost triangular, slightly longer than the second ; paraglossae projecting a little beyond the apex of the ligula. Elytra with or without red spot ; third interval with a small poriferous puncture.

The characteristics of this genus are given by Tschitscherus as approximating those of *Cyrtomoscelis*, which was unknown to him except from description. He includes in it *Feronia trivialis* (*Berea*) Boh., which, it can be safely assumed, was also unknown to him, and which has no puncture on the 3rd interval of elytra. It is therefore a matter of doubt if the species I refer to the genus is correctly placed, yet I believe it to be allied to, if not identical with, the type of the genus—i.e. *C. distigma* Tschits. The species of this genus are said by him to be met with in the eastern part of South Africa and in Madagascar.

Celioschesis longicornis Pér.

Suppl. Descr. Cat. (*Drimostoma*), p. 363.

As I stated in my description, the general facies of this species approximates it to a certain extent to *Stomonaxus amaroides*, but it does not belong to the same group of the *Pterostichini*, as well instanced by the length of the antennae, etc. ; the general facies of the only species known to me approximates a little that of *Inkosa latiuscula*, but is not so massively ampliate, and the 3rd interval bears a distinct deep poriferous puncture set a little past the median part. In comparison with *C. distigma* Tschits. it seems to be a little more parallel.

Celioschesis distigma Tschits.

Hor. Soc. Ent. Ross., vol. xxxii, 1898, p. 97.

I have not been able to identify the species on which Tschitschérine founded the genus. His extremely long description may be condensed as follows :

" Bright blackish brown above, with a very slight iridescence on the elytra ; mandibles glabrous ; the lateral fold and the posterior angles of the pronotum, the lateral fold of the elytra, and a small, elongate spot not far from the apex extending on the 2nd interval and impinging on the 3rd, reddish; legs, antennae, and palpi ferruginous red; pronotum transverse, 1·5 as wide as long, strongly narrowed in front but very little behind, widest in the middle, angles obtuse, sides regularly arcuate, but the arcuation more pronounced at the first third of the length, slightly convex in the centre; the median impressed line reaches neither base nor apex, the space separating the sides from the lateral fold is slightly depressed; the hind piliferous pore is situated not in the groove, as is usually the case, but on the external fold at the very summit of the angle. Elytra not quite 1·5 time as long as wide, 2·5 as long, and 1·16 times as broad as the pronotum, and having its greatest width at about the median part; the base is not wider than that of the pronotum and fits against it, the first fifth of the length of the sides is slightly arcuate towards the shoulders, thence nearly parallel to slightly past the middle, and from there moderately arcuate; the shoulders are not rounded, although slightly obtuse; the striae are strongly marked, and become deeper still towards the apex; the intervals are moderately convex; prosternum entirely smooth; episterna slightly punctuate; sides of abdominal segments punctate and slightly rugolose."

Length, 8½ mm.; width, 3½ mm.

Locality.—Portuguese East Africa (Delagoa Bay).

Gen. Exocus Pér.

Descr. Cat., p. 557.

In my description of the genus I omitted to mention the deep, subtransverse, slightly supra-basal impression on the median longitudinal line of the pronotum.

Exocus ferrugineus Pér.

Descr. Cat., p. 557.

There are reasons to believe that *E. ferrugineus* is termitobious. Mr. Bell-Marley found one in a termite nest at Karkloof, Natal, and Father O'Neil informs me that he captured an example coming out of a termitarium. He adds that it is taken at light pretty often.

Locality.—Natal (Durban); Transvaal (Trichardt); S. Rhodesia (Bulawayo, Salisbury, Sebakwe); N.-E. Damaraland.

Exocus pulcher sp. n.

The description of *E. ferrugineus* applies to this species, the point of disemblance being the shape of the pronotum, which, instead of being slanting laterally in a straight line from the median part to the basal angle, is plainly sinuate there with the basal angle thus made more distinctly acuminate; the striae are seemingly slightly less plainly punctate, but the intervals are alike.

Length, 9 mm.; width, 4 mm.

Locality.—S. Rhodesia (Insiza).

Gen. ATIMUS Pér.

Descr. Cat., p. 555.

Atimus crenatostriatus Pér.

Descr. Cat., p. 555.

Locality.—Cape (Kimberley, Prieska).

PTEROSTICHIDES. II.

Gen. CAMPTOSCELIS Dej.

Spec. Col. III, 1828, p. 420.

Camptoscelis hottentota Oliv.

Pterostichus Pér., Descr. Cat., p. 608.

Camptoscelis dissidens sp. n.

Colouring, size, and general facies of *C. hottentota*, but it is more elongate, the elytra are more parallel, the lateral posterior part is much more plainly sinuate, and the base itself is thus more narrow, being only one-half of the width of the apex instead of a little more than two-thirds in *C. hottentota*; 3rd interval of elytra with a distinct median setigerous puncture; abdomen and legs (♂) as in the preceding species.

Length, 18½ mm.; width, 6 mm.

I have seen only one example of this species collected by Ecklon and Zeyher, and figuring in their list of insects as *C. hottentota* Oliv.

Gen. COPHOSOMORPHA Tschits.

Hor. Soc. Ent. Ross., vol. xxv, 1891, p. 154.
Pér., Descr. Cat., p. 560.

Key to the Species.

A^2. Outer margin of pronotum not highly reflexed from the median part to the base. Intervals of elytra nearly plane.
B^2. Elytra oblongo-ovate.
    c^2. No puncture on the 3rd interval of the elytra.
    a^2. Intervals of elytra not highly tectiform . . . . *dichroa*
    a^1. Intervals of elytra highly tectiform . . . . *pseudodichroa*
    c^1. A median and a supra-apical puncture . . . . *elizabethae*
B^1. Elytra oblongo-elongate.
C^2. Third interval of elytra with two punctures.
    a^2. Elytra strongly sinuate at apex, the suture dentate in the ♂. A post-median puncture and a supra-apical one . . . *caffra*
    a^1. Elytra normal at apex.
    b^6. A post-median puncture and a supra-apical one; elytra opaque *soror*
    b^5. A puncture at the apex of the first anterior third of the length and another at the base of the third.
    c^2. Pronotum more attenuate at base . . . . . *anceyi*
    c^1. Pronotum less attenuate at base . . . . . *blaisea*
    b^4. A puncture past the median part of the length and another nearly equi-distant from the first and the apex . . . *capicola*
    b^3. A puncture on the first fifth part of the length and another almost apical . . . . *propinqua*
    b^2. A puncture near the basal part and another in the centre . *lugubrina*
    b^1. A single puncture in the centre . . . . *modesta*
C^1. Third interval of elytra without puncture; elytra opaque; posterior angle rounded, not angular . . . . *diversa*
A^1. Outer margin of pronotum highly reflexed from the median part to the base. Intervals of elytra sub-carinate or tectiform.
B^2. Third interval of elytra without puncture . . . . *natalensis*
B^1. Third interval with an ante-median and a post-median puncture *laetans*

The species of this genus seem to be very local, and the number will probably be greatly increased for this reason.

Cophosomorpha pseudodichroa sp. n.

Very closely allied to *C. dichroa*, and almost alike except for the much more tectiform shape of the intervals of the elytra.

The only example I have seen was sent me by Mons. Rene Oberthür, and bearing the label, "*Capicola* Chaud.," but without any record of locality.

Length, 15 mm.; width, 5 mm.

Cophosomorpha elizabethae sp. n.

Black, shiny, antennae, palpi, and legs piceous rufescent; head of the normal shape and sculpture; pronotum a little wider than the head, narrower at the base than at the apex by one-fourth, with the sides arcuate, the arcuation more strongly defined in the third posterior part, but with the margin very little reflexed towards the posterior angle if compared with *C. dichroa* owing to the more shallow posterior lateral depression on the disk the surface of which is indistinctly plicate transversely, as in *C. dichroa*, but the median part of the base is distinctly striate vertically; the elytra are strongly oblongo-ovate, with the basal angles distinct and even sharp, narrowly striate, with the striae impunctate except for the normal series of foveae, which is interrupted towards the middle of the 8th stria; intervals tectiform, third with a median and a supra-apical puncture, fold of outer margin strongly defined; underside smooth, but with an ill-defined plication laterally; legs normal.

Length, 13 mm.; width, 5 mm.

Locality.—(Port Elizabeth).

Type ubi ?.

Cophosomorpha caffra Dej.

Descr. Cat., p. 562.

This species is easily recognised by the strong lateral sinuation of the posterior part of the elytra, the apical part of which is almost dentate, the posterior border almost truncate, and the suture bluntly dentate on each side.

Some errors seem to have crept into the habitat I gave for this species. I have recorded it only from Port Elizabeth, Graham's Town, and now Cape Town. The localities Somerset East and Seymour do not apply to this species, and Port St. John and Durban are erroneous.

Cophosomorpha blaisea sp. n.

Closely allied to *C. anceyi*, but the pronotum is laterally more ampliate owing to it being less attenuate the median part to the outer angle, which is also more angular, and the basal depression is deeper and broader; the elytra are slightly less parallel from the base to past two-thirds of the length; the intervals are a little more tectiform, and on the third there are two punctures, the first at about one-third of the length, and the other at a slightly shorter distance from the first than the first is from the base. The rest as in *C. anceyi*. In the only example I have seen (♂) the second puncture is obliterated on the left side.

Length, 15 mm. ; width, 5 mm.

Locality.—Cape (Mossel Bay, Cape St. Blaize).

Cophosomorpha propinqua sp. n.

Black, shiny, with the antennae and the abdomen piceous red. The general facies is that of *C. capicola* and *C. lugubrina*, especially the latter, but the disposition of the punctures on the 3rd interval is different, the first being slightly ante-median and the second situated near to the apex ; the intervals of the elytra are very slightly convex, the 5th not much more so at the base than the others (♀) ; the last segment of the abdomen has a distinct transverse basal groove obliterated in the centre.

Length, 13 mm. ; width, 5 mm.

Locality.—Cape (Cape Town).

Closely allied to *C. lugubrina*, but easily differentiated by the disposition of the two setigerous punctures on the 3rd interval of the elytra, and the transverse lateral groove on the last abdominal segment. The examples examined are all females.

Cophosomorpha modesta sp. n.

The description of *C. propinqua* suits this species, which is, however, shorter, and with the elytra more ovoid. The 3rd interval bears only one exactly median setigerous puncture.

Length, 11 mm. ; width, 4 mm.

Locality.—Cape (Port Elizabeth).

Cophosomorpha diversa sp. n.

Dull, somewhat opaque black ; antennae, legs, and abdomen very dark brown. It is to *C. lugubrina* that this species is more nearly related, but it is differentiated by the more rounded lateral posterior part of the pronotum, which is not angular, and the absence of a setigerous puncture on the 3rd interval. The rest as in *O. lugubrina*, but the three abdominal segments have a sulcus along the base. Seen two females.

Length, 14 mm. ; width, 5 mm.

Locality.—Cape (Cape Town).

Cophosomorpha natalensis Boh.

Descr. Cat., p. 563.

Locality.—Cape (Transkei); Zululand.

Cophosomorpha laetans sp. n.

Black, shiny, elytra slightly iridescent. Antennae, tibiae, and legs dark brown; head smooth, with the frontal impressions deep; pronotum arcuate laterally, with the posterior margin strongly reflexed, but as broad at the base as at the apex; the posterior angles slightly rounded; elytra elongate, with the humeral angles a little rounded; intervals moderately tectiform, the third with two punctures, the first at about a third of the length, the second at an equal distance from the apex as the first one is from the base; underside smooth, the two last abdominal segments with a distinct transverse sulcus running along the basal part of the segment.

This species is not unlike *C. natalensis*, and the shape of the pronotum is nearly identical; the elytra are less convex and the intervals less tectiform, and the two punctures on the 3rd interval, which are entirely absent in *C. natalensis*, are very distinct, and their disposition is quite different from those found in the other species of the genus when present. The transverse sulcus of the abdominal segments is very noticeable.

Length, 12 mm.; width, 4½ mm.

Locality unrecorded.

MACQUENA gen. n.

Facies more parallel than in the species of the two preceding genera; pronotum nearly parallel, or slightly attenuate towards the base, but not sinuate above the base and with the angles sharp; the rest as in *Cophosomorpha*.

A³. Elytra with one puncture on the 3rd interval . . . . *intermedia*
A². Elytra with two punctures on the 3rd interval.
  a². Pronotum parallel, as broad at base as at apex. First puncture median, the other apical; striae of elytra punctulate . . . *macroptera*
  a¹. Pronotum a little narrower at base than at apex, but straight laterally.
  b². An ante-median and post-median puncture on the 3rd interval *congener*
  b¹. A post-median and an apical puncture on the 3rd interval . *castelli*
A¹. Elytra without puncture on the 3rd interval . . . . *congruens*

Macquena castelli sp. n.

Black, little shiny (♀) on the pronotum, opaque on the elytra; shape of the pronotum as in *M. congruens*; elytra parallel from the base to slightly past the median part; only very slightly ampliate about two-thirds of the length, and normally attenuate thence; the scutellary striole is very distinct, the intervals of the elytra are sub tectiform, with the 7th strongly carinate in the anterior median part, and on the 3rd there is a puncture situated at two-thirds of the length, and another at a very short distance from the apex in a line with the apex of the 4th interval; underside and legs very shiny.

Length, 15½ mm.; width, 4½ mm.

Locality.—Basutoland (Giant's Castle Mountain).

Macquena congener Pér.

Suppl. Descr. Cat., p. 364.

Locality.—Transvaal (Lydenburg).

Macquena congruens Pér.

Descr. Cat., p. 562.

Syn: *M. fraudulens* Pér., Suppl. Descr. Cat., p. 364 (type).

Locality.—Transvaal (Lydenburg). The locality, Durban, Natal, is erroneous.

Gen. Mosuta gen. n.

The only species included in the genus is differentiated from the three preceding by the narrower and more linear shape; the pronotum is gradually attenuated from apex to base, where it is only half the width of the apex, without sinuation or reflexed margin in the posterior part; the number and disposition of the punctures on the 3rd interval differ from that of the other South African species of *Pterostichini*. The last three abdominal segments have a transverse basal groove.

Mosuta alticola Pér.

Suppl. Descr. Cat., p. 365.

Gen. Wahlbergia Tschits.

Ann. Mus. Zool. Acad. Imp. St. Petersb., 1896, p. 63.

In this genus the characteristics are more the shape than the divergence in other characters from *Camptoscelis*, *Cophosomorpha*, *Macquena*, etc. The body is parallel, the base of the pronotum is as wide as the apex, and the elytra are of the same width and opaque; the outer margin is strongly reflexed; the intervals of elytra are all sharply or alternately carinate.

Wahlbergia inordinata Pér.

Suppl. Descr. Cat., p. 365.

Not having any longer the type of this species, which I described as a *Cophosomorphus*, I am not quite sure that it should be included in this genus, but the description agrees with the characteristics of the genus.

Gen. TERATOTARSA Tschits.

Descr. Cat., p. 566.

In this genus the three basal joints of the anterior tibiae of the male are exactly like those of the female—that is to say, not dilated or spongy underneath. The sex difference consists in the presence of two setigerous punctures near the border of the last abdominal segments in the female and of one in the male, as in all the Carabid species. The projection of the metasternum is plurisetose, whereas it is glabrous in the other genera.

The two species included in this genus have so far been met on the slopes of peaks or mountain ranges only.

Teratotarsa minor sp. n.

Black, with the elytra semi-opaque, the antennal joints slightly rufescent and the palpi piceous; head of the normal shape and structure; pronotum a little attenuate laterally from the slightly ampliate median part towards the base, sub-sinuate above it, the base a little narrower than the apex, with the angles very sharp; disk with only a narrow impression along the basal angle, which is thus not much recurved; the median line and basal discoidal impressions are normal, and the fold of the outer margin is distinctly crenulate; scutellary striole distinct; elytra elongate ovate with the shoulders acute, somewhat plane for two-thirds of the length, with the intervals hardly convex in the median discoidal part, the convexity being more apparent laterally and in the posterior part; the 6th interval is carinate in the anterior part, but much less so than in *S. severini* or *S. rugipennis*; there is a deep puncture in the centre of the 3rd interval almost at the top of the declivous part, and the series of deep punctures on the 6th stria is not interrupted, although the median ones are not as closely set as the anterior and posterior; legs and underside normal.

Length, 16 mm.; width, 5½ mm.

Locality.—Cape (Oudebosch, Caledon Div., slopes of mountain, height 1500 feet).

BARNARDIA gen. n.

Barnardia superciliaris n. sp.

Black, with the elytra nearly opaque, antennal joints somewhat rufescent, palpi piceous red; head smooth, clypeus very slightly plicate longitudinally; pronotum broader than long, and slightly wider at the base than at the apex; sides very moderately ampliate rounded from the base to about two-thirds of the length, a little sinuate thence to the basal angle, which is thus projecting and very sharp; disk nearly plane, but the base is broadly and equally depressed from side to side, the depression ascending a little laterally; the supra-lateral sulcus is merged in the depression and the outer marginal border is faintly serrulate; scutellary striole distinct, punctulate; elytra as wide at the shoulders as the median part of the pronotum, conspicuously punctate striate with the intervals plane on the dorsal part, 7th and 8th sharply tectiform, the former not conspicuously carinate in the anterior part; the series of larger punctures on the 8th are closely set and equi-distant; there is a 9th punctate stria, and even a distinct but vaguely punctate 10th stria, beginning at about the median part and reaching the apex; no puncture on the 3rd interval in the ♂, but a distinct one in the ♀; legs normal; underside finely but irregularly plicate. I have seen one ♂ and four ♀♀. Distinguished from the other species by the presence of a conspicuous thick frontal ridge extending from the clypeal suture to beyond the eye, and bordered by a deep, narrow frontal sulcus slightly sinuose behind and reaching the second punctigerous puncture; the punctation of the elytra differs also greatly from that of all the South African species of the group.

Length, 17½–21 mm.; width, 8–9 mm.

Locality.—Cape (Oudebosch, Caledon Div., slopes of mountain, 1500 feet).

Named after Mr. K. H. Barnard of the South African Museum, who collected the specimens.

Gen. OGMOPHORA Tschits.

Hor. Soc. Ent. Ross., vol. xxxii, p. 20.

The facies of the species included in this genus is different from that of the others belonging to the group, in being more slender, owing to the pronotum being more distinctly rounded laterally, and especially towards the base, although not sinuate there, and the elytra having a more depressed appearance; the frontal sulci are longer and deeper, but the border formed thereby is not so much raised nor is it prolonged so far over the eyes as in *Barnardia*; the metasternal episterna are longer than broad on the anterior border, and in the only species of this genus the last three abdominal segments are grooved transversely at the base.

Ogmophora peringueyi, Tschits.

Descr. Cat., p. 608.

This species has a wide habitat in South Africa, Cape (Cape Town, Hutchinson, Victoria West, Kimberley), Free State (Smithfield). An example in the Museum collection is labelled "*Zambesi*," but the record is most probably erroneous.

Gen. CHALCOCHROUS Chaud.

Bull. Soc. Nat. Mosc., vol. i, 1838, p. 24.

Syn: *Steropomorpha*, Tschits.

Descr. Cat., p. 561.

The distinctive character of this genus is the presence of a long, non-bifid tooth in the mentum as in the other species of Group II. The elytra have a bronze sheen in the two species known to me, and have no puncture on the 3rd interval.

Chalcochrous degener Pér.

Descr. Cat., p. 561.

Syn: *C. captatrix*, Tschits.

Hor. Soc. Ent. Ross., vol. xxxii, 1898, p. 139.

The shape of the prothorax greatly differs from that of *C. lenis*, and it may prove necessary to found a new genus for its reception.

I described the first example I obtained as black; but it has really a bronze sheen, not so conspicuous, however, as in other specimens I obtained later on, on the slopes of Table Mountain at only 600 feet altitude.

Locality.—Cape (Cape Town, Newlands).

Chalcochrous otiosus, Tschits.

Hor. Soc. Ent. Ross, vol. xxxii, 1898, p. 139.

♂ piceous brown, upper part of body slightly bronzy, with a silky lustre; legs reddish brown; antennae reddish, with joints 2–6 more or less spotted with brown; palpi brownish, with the end of the last lighter.

This species is extremely closely allied to *C. lenis* Germ., but distinct. It differs in addition to the much more obscure coloration of the palpi, antennae, and legs, and the less bright bronze sheen of the surface of the body, firstly by the shape of the pronotum, which is distinctly wider, also of about equal length (1·2 as broad as long), with the anterior angles projecting although very feebly, whereas in *C. lenis* these angles are not projecting; the elytra are also wider, broader at the shoulders, narrower behind, and less elongate in proportion to the length (1·6 as long as wide), instead of 1·75 as in *C. lenis*. The head is a little less wide between the eyes, and slightly plicate in the only example I have, but this may prove to be an individual character.

Length, 12 mm.; width, 4 mm.

Locality.—Cape of Good Hope.

I have not as yet identified this species.

TRIBE PLATYNINI.

Descr. Cat., p. 567.

Key to the Genera.

A^2. Claws of tarsi normally diverging.
B^2. No puncture on the 3rd interval of elytra. Mentum with a triangular median tooth.
C^2. Median tooth short, bluntly bifid . . . . . *Laemosthenes*
C^1. Median tooth long, slightly truncate at tip . . . . . *Enoicus*
B^1. Three punctures on the 3rd interval of elytra.
C^2. Mentum with a long median tooth, truncate or not.
  a^2. A scutellary stria . . . . *Platynus*
  a^1. No scutellary stria . . . . *Phimus*

C¹. Mentum without a median tooth . . . . . . *Euleptus*

A¹. Claws of tarsi set close to each other. One post-median puncture on the 3rd interval. Prothorax cordate, but not sinuate laterally behind *Angionychus*

Gen. LAEMOSTHENES Bonel.

Descr. Cat., p. 571.

Laemosthenes complanatus Dej.

Descr. Cat., p. 571.

A European species which does not seem to have retained a footing in South Africa beyond a small radius from the ports of entry. I have found it not uncommon in packages from Europe packed with straw, and I have repeatedly met with it in the Museum grounds.

Gen. ENOICUS Pér.

Descr. Cat., p. 581.

Enoicus fallax Pér.

Descr. Cat., p. 582.

Misprinted *Euleptus fallax.*

Gen. PLATYNUS Bonel.

Descr. Cat., p. 572.

Key to the Species.

Sub-gen. MEGALONYCHUS.

A². Third interval of elytra with three punctures.

B². Intervals of elytra plane.

C². Pronotum elongate, not ampliate laterally. Facies narrower than in the following species. Elytra distinctly oblong . . . . *oblongus*

C¹. Pronotum ampliate laterally.

  *a*². Pronotum aciculate punctate over the whole disk.

  *b*². Pronotum twice as broad as long . . . . . *latipennis*

  *b*¹. Pronotum one-third broader than long . . . . *umtalianus*

  *a*¹. Pronotum aciculate or more or less roughly punctate, but the discoidal part smooth.

  *b*². Discoidal part of pronotum not plicate transversely convex; striae of elytra indistinctly punctate . . . . . *gilvipes*

  *b*¹. Discoidal part of pronotum slightly plicate transversely; elytra a little more parallel; striae less indistinctly punctate . *interstitialis*

B¹. Intervals of elytra strongly costate; striae distinctly punctate *obsequiosus*

A¹. Third interval of elytra with two punctures. Pronotum ampliate laterally.

B³. Intervals of elytra carinate.

C². Sides of pronotum broadly aciculate . . . . *crenatostriatus*
C¹. Sides of pronotum sub-scrobiculate punctate . . . . *insolitus*
B². Intervals of elytra costate. Antennae wholly flavous; centre of anterior border of pronotum hardly aciculate . . . . . *insuetus*
B¹. Intervals of elytra plane. Antennae, with the exception of the first joint fuscous; centre part of anterior border of pronotum closely aciculate *emeritus*

Sub-gen. ANCHOMENUS.

A². Pronotum punctate laterally, but with the disk smooth. Third interval of elytra with two punctures. Elytra broad, parallel, bronze green, tibiae black. Pronotum more distinctly attenuate towards the base *latiusculus*
A¹. Pronotum not aciculate or punctate laterally. Third interval of elytra with three punctures.
B³. Pronotum sub-transverse cordiform.
C². Pronotum moderately attenuate laterally towards the base.
 *a*². Black, legs red, outer margin of pronotum concolorous . *rufipes*
 *a*¹. Elytra metallic green, pronotum and elytra with a yellow margin *pauper*
C¹. Prothorax distinctly attenuate laterally towards the base; pronotum moderately elongate.
 *a*². Elytra metallic green; intervals smooth . . . . *natalensis*
 *a*¹. Elytra greenish red, intervals transversely impressed sub-tesselate *diversus*
B². Pronotum sub-elongate and cordiform.
C³. Elytra black, strongly costate; antennae and legs red; intervals of elytra convex; striae distinctly punctate . . . . *striatitarsis*
C². Elytra black, moderately costate; antennae fuscous, except the three basal joints.
 *a*³. Median part of pronotum slightly angular; striae not deeply punctate *laetulus*
 *a*². Median part of pronotum not angular; striae not deeply punctate *fallaciosus*
 *a*¹. Median part of pronotum not angular; striae conspicuously punctate *transvaalensis*
C¹. Pronotum and elytra black, both with a broad flavescent margin.
 *a*². Pronotum distinctly attenuate laterally towards the base . *capicola*
 *a*¹. Pronotum not distinctly attenuate laterally towards the base . *velox*
B¹. Pronotum elongate, sub-hexagonal. Upper side green, opaque, elytra with a narrow yellow margin.
C². Legs flavescent; knees not distinctly infuscate . . . . *alacer*
C¹. Legs with the knees plainly infuscate . . . . . *gracilis*

Platynus latipennis Boh.

Descr. Cat., p. 575.

Locality.—Natal (Durban).

Platynus gilvipes Boh.

Descr. Cat., p. 574.

Locality.—Transvaal (Watervalonder). The locality "Salisbury," *loc. cit.*, is erroneous.

Platynus interstitialis Boh.

Descr. Cat., p. 574.

Syn: *M. fraternus* Pér., Suppl., p. 366.

Having seen a type of Boheman's species after my description of *M. fraternus*, I find the latter to be identical with it. The habitat "Salisbury" applies thus to *M. interstitialis.*

Locality.—Transvaal (Irene, Pretoria, Thabina in Zoutpansberg, Waterberg, Pietersburg); S. Rhodesia (Umtali).

Platynus transvaalensis sp. n.

Closely allied to *P. fallaciosus*, with which it agrees in shape, size, and colouring, but the sculpturing of the elytra differs. The punctures of the striae, instead of being finely punctate, are much deeper, and impinged slightly in the dorsal part on the side of the intervals, which are there plainly costate for at least two-thirds of the length instead of being almost plane or very little costate, as in *M. fallaciosus.* Moreover, the dorsal part is distinctly depressed in *P. transvaalensis.*

Length, 7 mm.; width, $2\frac{4}{5}$ mm.

Locality.—Transvaal (Johannesburg).

Platynus alacer Boh.

Descr. Cat., p. 578.

Locality.—Transvaal (Pretoria, Rietfontein in Zoutpansberg, Lydenburg, Watervalonder).

Gen. EULEPTUS Lac.

Descr. Cat., p. 579.

Euleptus caffer Boh.

Descr. Cat., p. 580.

Syn: *E. elegans* Pér., *loc. cit.*, p. 580.

Locality.—Natal (Howick, Hilton Road, Pinetown, Newcastle); Transvaal (Florida, Rietfontein in Zoutpansberg, Lydenburg, Watervalonder).

Euleptus intermedius Pér.

Descr. Cat., p. 580.

Locality.—S. Rhodesia (Umtali, Sebakwe).

Euleptus albicornis Pér.

Descr. Cat., p. 581.

Locality.—Eastern Transvaal (Zoekmakaar).

PHIMUS gen. n.

Mentum of *Anchomenus*, ligula broadening towards the apex, straight across the tip, but rounded laterally, paraglossae adhering to the ligula and very slightly longer; palpi of *Anchomenus*; pronotum transverse; elytra oblong, without scutellary striae; anterior and intermediate tarsi only moderately long; the joints of the former dilated in the male, the first not very much longer than the second (*gilvipes*), or a little longer, second and third short, fourth not smaller than the third; legs and tarsi not carinate.

Key to the Species.

A². Pronotum sub-parallel.
B². Upper side shining.
C². Upper side black, dorsal striae of elytra moderately deep . . *nanniscus*
C¹. Upper side, especially the elytra, rufescent metallic . . . *harpaloides*
B¹. Upper side sub-opaque, bronze, with a silky sheen . . *namaquensis*
A¹. Pronotum cordiform. Upper side bronze green, shiny, dorsal intervals of elytra costate . . . . *gilvipes*

Three of the species included in this genus (I placed two formerly in *Agonum* and one in *Laemosthenes*) have the general appearance of a Harpalid, but are at once distinguished by having two supra-orbital setae instead of one; the fourth species is not unlike an Abacetid.

Gen. ANGIONYCHUS Klug.

Descr. Cat., p. 583.

Angionychus lividus Klug.

Descr. Cat., p. 583.

The pronotum is ampliate rounded and attenuate but not sinuate towards the base; the elytra have no scutellary striae.

Locality.—Natal (Isipingo).

Tribe POGONINI.

Descr. Cat., p. 584.

The representatives of this tribe have two supra-orbital setigerous punctures.

Key to the Genera.

A^2. Tibiae spinulose outwardly.
B^2. Median tooth of mentum long, bifid; elytra deeply punctured . *Pogonus*
B^1. Median tooth of mentum short, not bifid; elytra without well-defined striae . . . . *Extromus*
A^1. Tibiae not spinulose outwardly.
B^2. Median tooth of mentum bifid; four of fifth elytral striae when present curved outwardly at apex . . . . *Trechus*
B^1. Median tooth of mentum not bifid, no curved elytral stria . *Perileptus*

Gen. Trechus Clairv.

Descr. Cat., p. 587.

Key to the Species.

A^2. Anterior tibiae not obliquely truncate outwardly.
B^3. Elytra oblong. Elytra with three discoidal striae on each side and two entire ones along the margin.
C^4. Striae very deep, general colour chestnut . . . . *mashunus*
C^3. Striae deep; body lesser size . . . . *aterrimus*
C^2. Pronotum sinuate laterally . . . . *monticola*
C^1. Striae fine, body larger size . . . . *ambiguus*
B^2. Elytra oblong ovate.
C^3. Striae deep . . . . *solutilis*
C^2. Elytra with six discoidal striae on each side . . . . *agilis*
C^1. Elytra with five discoidal striae on each side . . . . *laetulus*
B^1. Elytra plainly ovate.
C^2. Elytra with six shallow discoidal striae; intervals plane, one dorsal puncture on 3rd interval . . . . *tabulae*
C^1. Elytra with six deep discoidal striae; intervals raised; two conspicuous punctures on 3rd interval . . . . *scitulus*
A^1. Anterior tibiae obliquely truncate outwardly.
B^2. Elytra oblongo-ovate. Elytra with five dorsal striae on each side. Posterior angles of pronotum not acute . . . . . . *parilis*
B^1. Elytra oblong.
C^4. Posterior angles sharp, projecting . . . . *pallipes*
C^3. Elytra with six dorsal striae on each side . . . . *rufipes*
C^2. Elytra with seven dorsal striae, the fourth diverging outwardly towards the apex . . . . *vivax*
C^1. Elytra with seven dorsal striae, the fourth not diverging outwardly *gravis*

Trechus mashunus sp. n.

Chestnut red, shiny, palpi, antennae, and legs testaceous. Closely allied to *T. aterrimus*, but a little more robust, and with the elytra less parallel; the latter have also three discoidal striae without any trace of a fourth, but the second reaches as far back as the first; the three are distinctly deeper than in *T. aterrimus*, and the intervals are more convex; the two striae above the outer margin are conspicuous.

Length, 4 mm.; width, 2 mm.

Locality.—S. Rhodesia (Umtali).

Trechus monticola sp. n.

Piceous black, shiny, antennae fuscous with the first joint reddish; palpi and legs rufescent; head sulci very deep and strongly arcuate; pronotum ampliate cordate, a little broader than long, moderately attenuate but not sinuate towards the base; elytra oblong, each with three discoidal deep striae, the outer one of which begins at the anterior puncture but stops short of the declivity; hind sinus distinct.

Closely related to *T. aterrimus*, but smaller, and differing in the shape of the pronotum, which is shorter in proportion and more rounded laterally, and less attenuated towards the base; the legs are flavescent instead of deep fuscous.

Length, 3 mm.; width, $1\frac{1}{5}$ mm.

Locality.—Cape (Hottentots Holland Mountains, Caledon Division, 4000 feet).

Trechus ambiguus Pér.

Descr. Cat., p. 589.

Colour and shape of *T. aterrimus*, but larger; the pronotum is proportionally more ampliated laterally; the disposition of the striae in the elytra are the same, but they are finer and shallower, and so are the two supra-marginal ones, which are, however, quite distinct. The type was described from an immature example.

Length, 5 mm.; width, 2 mm.

Locality.—Cape (Ceres district, Matroosberg, 3800 feet; Tulbagh, Great Winterhoek, 4000 feet).

Trechus agilis sp. n.

Slender, elongate, pale, testaceous, with the head and pronotum redder, and an infuscate elongate sutural patch past the median part of the elytra; antennae infuscate, with the three basal joints rufescent; legs flavescent. Head with the sulci very deep; pronotum cordate, sinuate laterally, base half the width of the elytra and a little narrower than the apex; elytra elongate, oblong, but slightly ampliate past the middle, and having on each side six discoidal striae, the first three starting from near the base, the other three from a short distance from it; the juxta-sutural stria alone reaches the apex, the other four stop a little short of it, the sixth being still shorter; the apical sinus is indistinct.

Length, $3\frac{1}{4}$ mm.; width, $1\frac{1}{4}$ mm.

Locality.—Cape (Clanwilliam).

Trechus pallipes Boh.

Descr. Cat., p. 589.

Locality.—Cape (Oudebosch, Caledon Division).

Trechus rufipes Boh.

Descr. Cat., p. 589.

T. affinis Pér., *loc. cit.*, p. 589.

Locality.—Cape (Uitenhage); S. Rhodesia (Salisbury).

Trechus vivax Pér.

Descr. Cat., p. 590.

Locality.—Cape (Uitenhage); Natal (Malvern).

TRIBE BEMBIDIINI.

Descr. Cat., p. 591.

Key to the Genera.

A⁴. Eyes large; anterior tibiae not distinctly obliquely truncate inwardly towards the apex; a juxta-scutellary stria, and eight striae on each elytron . . . . *Bembidium*

A³. Eyes moderate; anterior tibiae not obliquely truncate; no juxta-scutellary stria; number of striae seldom normal, and even reduced to one *Tachys*

A². Eyes entirely obliterated; body depressed . . . *Scotodipnus*

A¹. Eyes with a few facets; body depressed . . . . *Heterillus*

Gen. BEMBIDIUM Latr.

Syn : *Peryphus* Meg.
Descr. Cat., p. 591.

Bembidium variegatum Boh.

Descr. Cat., p. 592.

Locality.—Nearly the whole of South Africa, except a few south western districts of the Cape.

Bembidium sobrinum Boh.

Descr. Cat., p. 592.

Boheman's description leaves no doubt as to the shape of the pronotum being the same as in *B. variegatum*, the only difference being the livery of the elytra being dull greenish bronze with a narrow apical transverse flavescent band. This livery I have only seen, however, in *B. diversum*, the pronotum of which is plainly angular laterally in the middle.

Bembidium diversum sp. n.

In size this species closely approximates *B. variegatum* except for the shape of the pronotum, which instead of being ampliate rounded (not slightly angular as stated, *loc. cit.*) laterally towards the middle, is there plainly angular and even acute ; the livery of the elytra, instead of being more or less green tessellated with yellow elongate patches, or yellowish dotted with green spots, is dull-green except towards the apex, where there is a narrow yellow border ascending the margin for a short distance. This livery approximates very closely that of *B. sobrinum*, as stated above.

Length, 4 mm. ; width, 1½ mm.

Locality.—Cape (Dunbrody) ; Mozambique (Rikatla).

Gen. TACHYS Sch.

Descr. Cat., p. 593.

A². Discoidal striae beginning at or near the base.
B². No deep impression on each side of the base.
C⁶. Elytra with eight striae on each side ; striae normal, lateral ones seriate punctate ; body light testaceous . . . . . . *emeritus*

C^5. Elytra with six discoidal striae, the outer one interrupted at both ends; body somewhat robust; bronze green, with a faint posterior reddish patch *crassiusculus*

C^4. Elytra with six discoidal striae of equal length and depth, body more slender, light testaceous . . . . *precarius*

C^3. Elytra with six discoidal striae, the sixth ill-defined, eighth obliterated, iridescent pale reddish, with a broad median transverse fuscous band on the elytra . . . . *migrator*

C^2. Elytra with five discoidal striae. Striae of equal length, fifth distinct; elytra with two longitudinal yellow bands on each side . . *invictus*

Striae of equal length, fifth less distinct; testaceous, with discoidal part of elytra fuscous, iridescent . . . . *vicarius*

C^1. Elytra with five discoidal striae, but the fifth faint, and disappearing beyond the basal part; testaceous; discoidal part of elytra iridescent.

a^2. Antennae fuscous . . . . *caffer*

a^1. Antennae wholly flavous, size smaller . . . . *umtalensis*

B^1. Elytra with a deep, often conspicuous impression on each side of the base.

C^2. Impression shallow, elytra oblong.

a^2. Elytra with five discoidal striae, body black . . . *vescus*

a^1. Elytra with four discoidal striae; head and pronotum black; elytra flavescent, with a narrow black border . . . . *gratus*

C^1. Impression deep; elytra oblongo-ovate or oblong.

a^2. Elytra with five discoidal lines; elytra oblongo-ovate, convex, body testaceous red . . . . *secutorius*

a^1. Elytra with four discoidal striae.

b^4. Elytra with the discoidal striae smooth, the third short, the fourth shorter, not produced beyond the two dorsal punctures, body black *capicola*

b^3. Elytra with the discoidal striae smooth, second and third short and of equal length, fourth longer . . . . *spurius*

b^2. Elytra with the discoidal striae punctulate, third and fourth of nearly equal length and only a little shorter than the second, which reaches the declivity . . . . *vagans*

b^1. Elytra very convex, third stria not punctured; a fourth very short, sometimes sub-evanescent basal stria . . . . *fartus*

A^1. Discoidal striae, not beginning at the base, except the first.

B^3. Elytra with three discoidal striae.

C^4. Elytra with the third striae reaching only the two punctures, eighth stria present; colour black, iridescent. . . . . . . *faustus*

C^3. Elytra with a supra-apical well-defined yellow patch . . *khoinus*

C^2. Elytra with the discoidal striae hardly defined and evanescent past the median part; piceous black, shiny . . . . . . *picinus*

C^1. Elytra much depressed in the centre, second and third stria reaching the hind declivity . . . . *shiluwanus*

B^2. Elytra with two discoidal striae.

C^6. Pronotum cordate; elytra slightly ampliate; elytra with two rufo-flavescent patches on each side.

a^2. Elytra somewhat convex behind; striae deeply punctured . *apicalis*

a^1. Elytra nearly plane, striae less deeply punctate . . . *imitans*

C^5. Pronotum less or not cordate, elytra not ampliate.
  a^3. Red, with a broad fuscous band extending from side to side *moestus*
  a^2. Piceous, elytra with a longitudinal yellowish band, and an elongate ovate patch towards the apex . . . . . *jucundulus*
  a^1. A small posterior reddish patch on each side . . . *crassescens*
C^4. Pronotum more cordate ; antennae infuscate, legs flavescent . *exiguus*
C^3. Pronotum less cordate, antennae and legs black . . . *agatinus*
C^2. Pronotum transverse, distinctly sinuate laterally ; elytra depressed, striae smooth ; colour stramineous ; antennae normally filiform . *arrogans*
C^1. Pronotum rounded, not distinctly sinuate laterally ; elytra less depressed, striae smooth, colour flavous, antennal joints not filiform . *cautus*
B^1. Elytra with one discoidal stria.
C^2. Five ultimate joints of antennae whitish.
  a^2. Elytra strongly ovate, with humeral angles strongly projecting.
  b^2. The juxta-sutural line and a short sub-humeral stria very fine ; an occasional round yellowish patch on each side of the posterior part of the elytra ; antennae slender . . . . . *humeralis*
  b^1. The juxta-sutural stria and sub-humeral line deeper and longer ; antennae slender. . . . . *optimus*
  a^1. Elytra oblongo-ovate, with the humeral angles not projecting ; juxta-sutural line deep, no sub-humeral stria ; antennae not slender *sebakwensis*
C^1. Antennal joints concolorous.
  a^2. Elytra oblong or oblongo-ovate ; concolorous.
  b^4. Elytra oblongo-ovate, body somewhat robust, stria quite distinct, also the posterior sinus . . . . *humilis*
  b^3. Elytra oblongo-ovate, body less robust . . . . *nanniscus*
  b^2. Elytra oblong, body very minute, stria distinct, posterior sinus evanescent. . . . . *pusillimus*
  b^1. Elytra oblong, body very minute, stria less distinct . *minutissimus*
  a^1. Elytra very ampliate, two distinct yellow patches on each side *dives*

Tachys emeritus Pér.

Suppl. Descr. Cat., p. 363.

Pale testaceous, with the antennae and palpi light flavescent ; head smooth, eyes bulging ; prothorax transverse, a little attenuate and slightly sinuate from the median part towards the base, with the angle sharp, smooth, with a distinct longitudinal impression, the basal one deep and smooth ; elytra oblong, and having eight punctate striae with the first four intervals, the 3rd especially, somewhat tectiform ; the 1st stria reaches from the base to the apical sinus ; the others begin equally at the top of the basal depression, and reach the top of the posterior declivity ; the 6th and 7th are continued a little further as a series of deep punctures ; the two dorsal punctures on the 3rd interval are very distinct. In the original description I mentioned five striae only.

Length, 1¼ mm.; width, ¾ mm.

Locality.—Cape (Enon, Dunbrody).

Tachys crassiusculus Pér.

Descr. Cat., p. 594.

Locality.—Transvaal (Shilouvane, Pietersburg); S. Rhodesia (Sebakwe).

Tachys migrator Fauv.

Descr. Cat., p. 595.

Locality.—Cape (Stellenbosch, Dunbrody).

Tachys invictus sp. n.

Metallic green, shiny; the five basal antennal joints, palpi, and legs flavescent; head normal, sulci short; pronotum broad, wider than long, attenuate rounded laterally in the anterior part, very little behind and hardly sinuate above the sharp, slightly projecting outer angle; elytra oblong, a little wider than the base of the pronotum, shoulders somewhat rounded and having each five discoidal somewhat deep striae, the juxta-sutural of which alone is entire; two and three begin at the base, four and five at some distance from it, and all four stop short of the declivity, the second being, however, more prolonged; hind sinus very distinct; each elytron has a yellow elongate supra-humeral band extending from the outer margin to the fifth discoidal stria, and reaching from near the base to about the median part of the length, and a broader one beginning along the outer margin at about the second third of the length, and extending on the discoidal part as far as the apex of the striae, and reaching posteriorly the suture below the second discoidal stria.

Allied to *Tachys crassiusculus* Boh., and of the same build. The pronotum is a little longer, there are five discoidal striae instead of six, and the yellow markings of the elytra are very distinct. Occasionally a faint reddish-yellow patch in the posterior part of the elytra is discernible in *T. crassiusculus*.

Length, 3¼ mm.; width, 1½ mm.

Locality.—Natal (Isipingo).

Tachys umtalensis sp. n.

Not unlike *T. precarius* in general appearance and likewise wholly testaceous, but there are five discoidal and deeper striae on each side of the elytra instead of six. On this account it approximates *T. caffer*, but the antennae are wholly flavescent instead of being infuscate; the first discoidal stria is deeper, second and third shorter; the size is about one-third less than *T. caffer*.

Length, $2\frac{1}{2}$–$2\frac{3}{4}$ mm.; width, 1–$1\frac{1}{4}$ mm.

Locality.—S. Rhodesia (Umtali).

Tachys vagans Pér.

Descr. Cat., p. 596.

Locality.—Transvaal (Kaapmuiden, Komati Poort).

Tachys faustus Pér.

Descr. Cat., p. 596.

Locality.—Natal (Malvern); Transvaal (Weltervreden); Bechuanaland (Ramoutsa); S. Rhodesia (Umtali, Livingstone).

Tachys khoinus sp. n.

Black, shiny, antennae long, joints elongate, black with the first two flavescent; palpi black; prothorax broadly cordate, distinctly sinuate above the base, the angle of which is sharp and smooth, longitudinal transverse basal impressions normal; elytra oblong, and having in the posterior part a transverse flavous patch; each elytron has three deep, smooth striae, the first one entire, the second begins at some distance from the basal impression and reaches the declivous part opposite the hind margin of the apical patch, the third begins at the first puncture and is continued beyond the second; the eighth stria is entire and very deep, especially near the shoulders.

Length, $2\frac{1}{4}$ mm.; width, $1\frac{3}{5}$ mm.

Locality.—Cape (Clanwilliam).

Tachys shiluwanus sp. n.

Black, iridescent; antennae and legs infuscate. Very closely allied to *T. faustus* and easily mistaken for this species, but the iridescence is stronger, the depression along the suture is very marked, and the second and third striae, which are not so deep as in *T. faustus*, reach the rounding of the hind declivity.

Length, $2\frac{1}{4}$ mm.; width, $1\frac{2}{5}$ mm.

Locality.—Transvaal (Pietersburg, Shilouvane).

Tachys moestus sp. n.

Red, with a broad fuscous band on the elytra occupying about one-third of the area and extending from side to side; elongate-oblong, antennae, legs, and palpi flavescent; head normal; pronotum transverse, slightly attenuate sinuate laterally towards the base but not cordiform; elytra deeply impressed at the base and bearing each two discoidal deep striae, the first of which is entire, but the second begins at one-fifth of the length and reaches slightly further than the top of the declivity. More parallel than *T. imitans*, the livery of which it approximates; it is easily distinguished by its much smaller size, and by the pronotum being broader and less attenuate laterally towards the base.

Length, 2 mm.; width, $\frac{3}{5}$ mm.

Locality.—Transvaal (Kaapmuiden).

Tachys exiguus Boh.

Descr. Cat., p. 598.

Locality.—Cape (Cape Town, Beaufort West, Clanwilliam).

Tachys agatinus sp. n.

Black, very shiny, antennae and legs deep black, somewhat robust. Allied to *T. exiguus*, which it closely resembles, but is distinguished by the deep black antennae and legs; the pubescence on the joints of the former is long and greyish; the shape of the pronotum and elytra is alike, and the latter has also two discoidal striae, but in *T. agatinus* the second stria is shorter than in *T. exiguus*, beginning only slightly above the first discoidal puncture and reaching only the top of the hind declivity.

Length, 2 mm.

Locality.—Cape (Tulbagh, 4000 feet).

Tachys humeralis Pér.

Descr. Cat., p. 599.

Syn: *T. servilis* Pér., Suppl. Descr. Cat., p. 370.

Locality.—S. Rhodesia (Umtali).

Tachys optimus Pér.

Suppl. Descr. Cat., p. 370.

Locality.—S. Rhodesia (Salisbury).

Tachys sebakwensis sp. n.

Black, shiny, antennae fuscous with the five apical joints whitish, legs flavescent with the tibiae slightly lighter ; head of normal shape ; pronotum regularly ampliate rounded, but slightly angular in the middle and a little narrower across the base than at the apex ; elytra oblong, with the base nearly straight and the humeral angles sharp, but not projecting ; the juxta-sutural stria is deep and smooth, and so is the posterior sinus ; the eighth stria is equally deep.

This species is easily recognised from the other two South African species in which the apical joints of the elytra are whitish—i.e. *T. humeralis* and *T. optimus*—in the greater thickness of the antennal joints, the five joints of which, instead of six, are white, in the much more ampliated pronotum, the less ovate elytra, the not acuminate humeral angles, and the more robust facies.

Length, 3 mm. ; width, 1½ mm.

Locality.—S. Rhodesia (Sebakwe).

Tachys humilis Pér.

Descr. Cat., p. 599.

Syn : *T. debilis* Pér., Ann. S. Afr. Mus., vol. v, 1908, p. 295.

Tachys pusillimus Pér.

Descr. Cat., p. 599.

This species was not recorded from Salisbury, as stated by me (*loc. cit.*).

Tachys dives sp. n.

Piceous black, shiny, antennae and legs flavous ; head of the normal shape, with the eyes very bulging ; antennae pale flavescent with the basal joint darker ; pronotum broadly ampliate, sub-orbicular, one-fourth broader than long, not sinuate towards the base, which is equal in width to the apex ; elytra slightly more than twice the width of the pronotum at its widest part, oblong, with the shoulders slightly sloping but with the angles distinct ; the juxta-sutural stria is smooth and reaches from a distance from the base to the apex; the posterior sinus is strongly marked, and so is the eighth stria; on each side are two very distinct yellow patches, the anterior a little larger and more quadrate than the posterior one, which is rounded but a little transverse; the fore tibiae are of the normal shape, but somewhat ampliate above the supra-apical spinose angle.

The ampliate shape of the pronotum and elytra in proportion to its length is a feature peculiar to this South African species.

Length, 3 mm.; width, $1\frac{1}{5}$ mm.

Locality.—Transvaal (Kaapmuiden).

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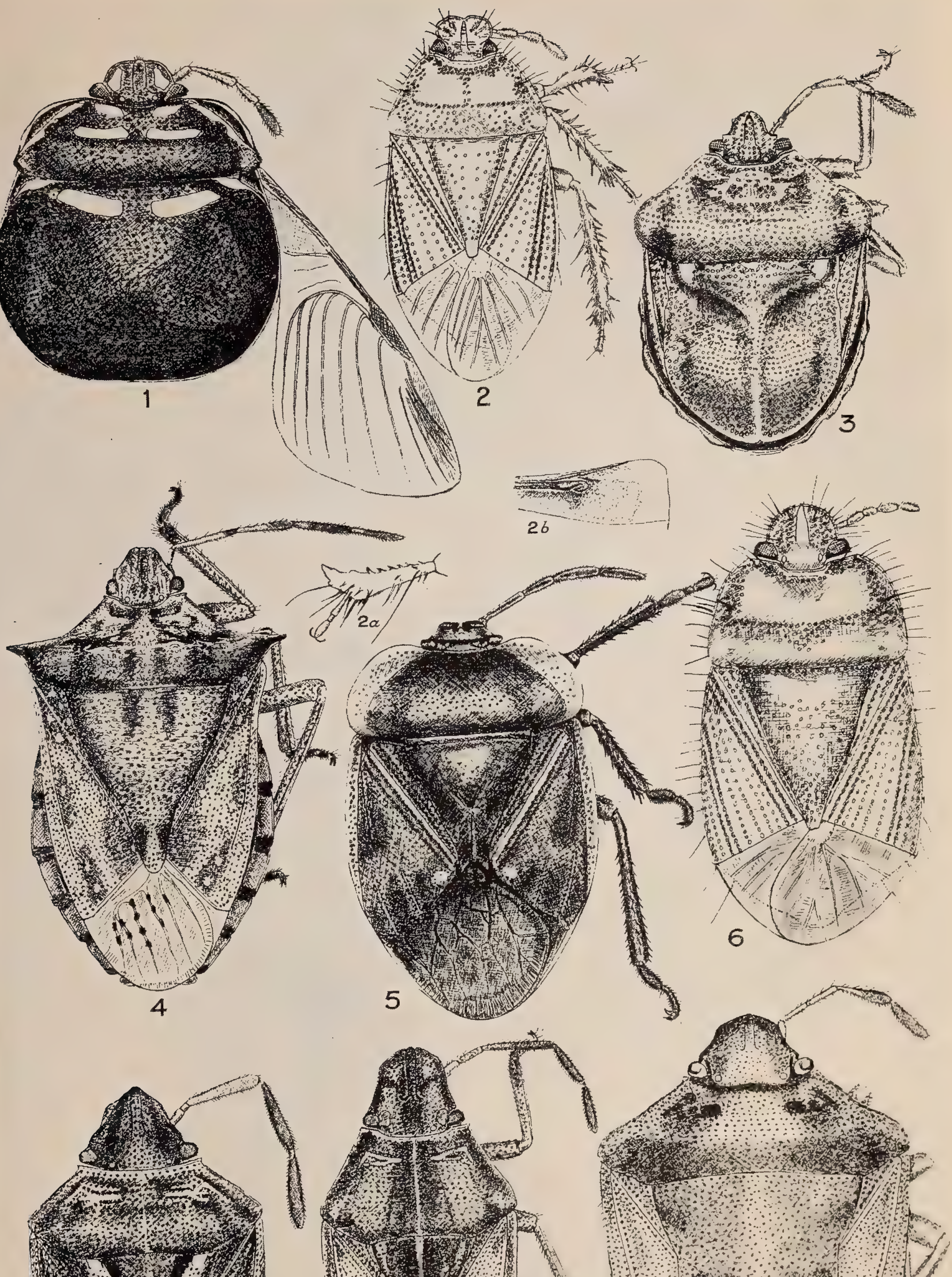

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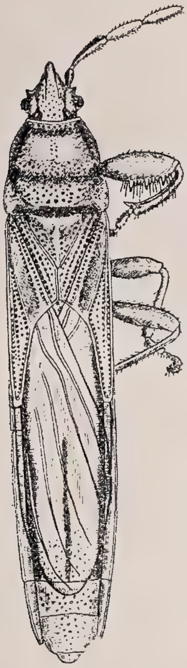

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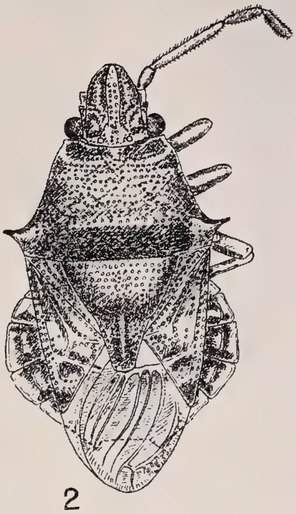

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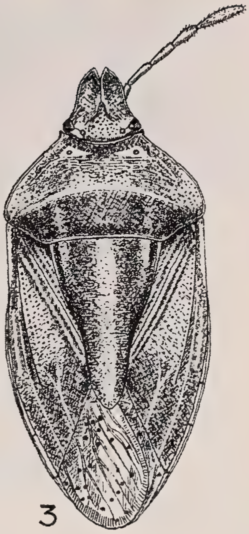

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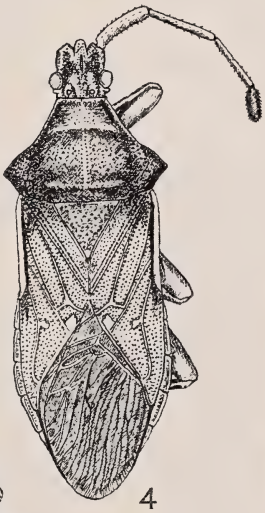

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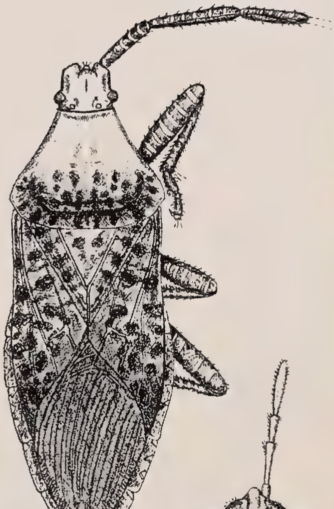

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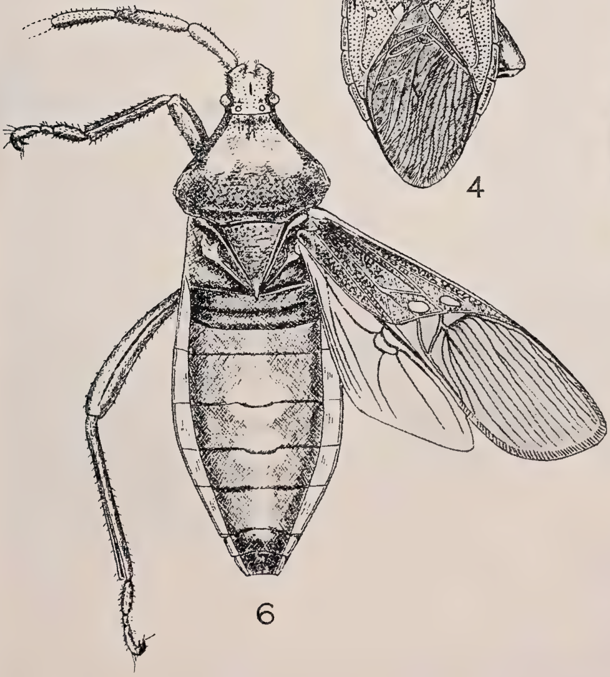

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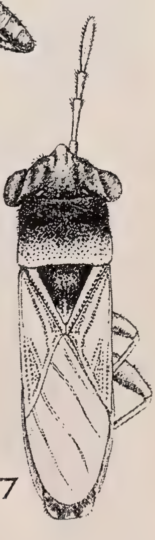

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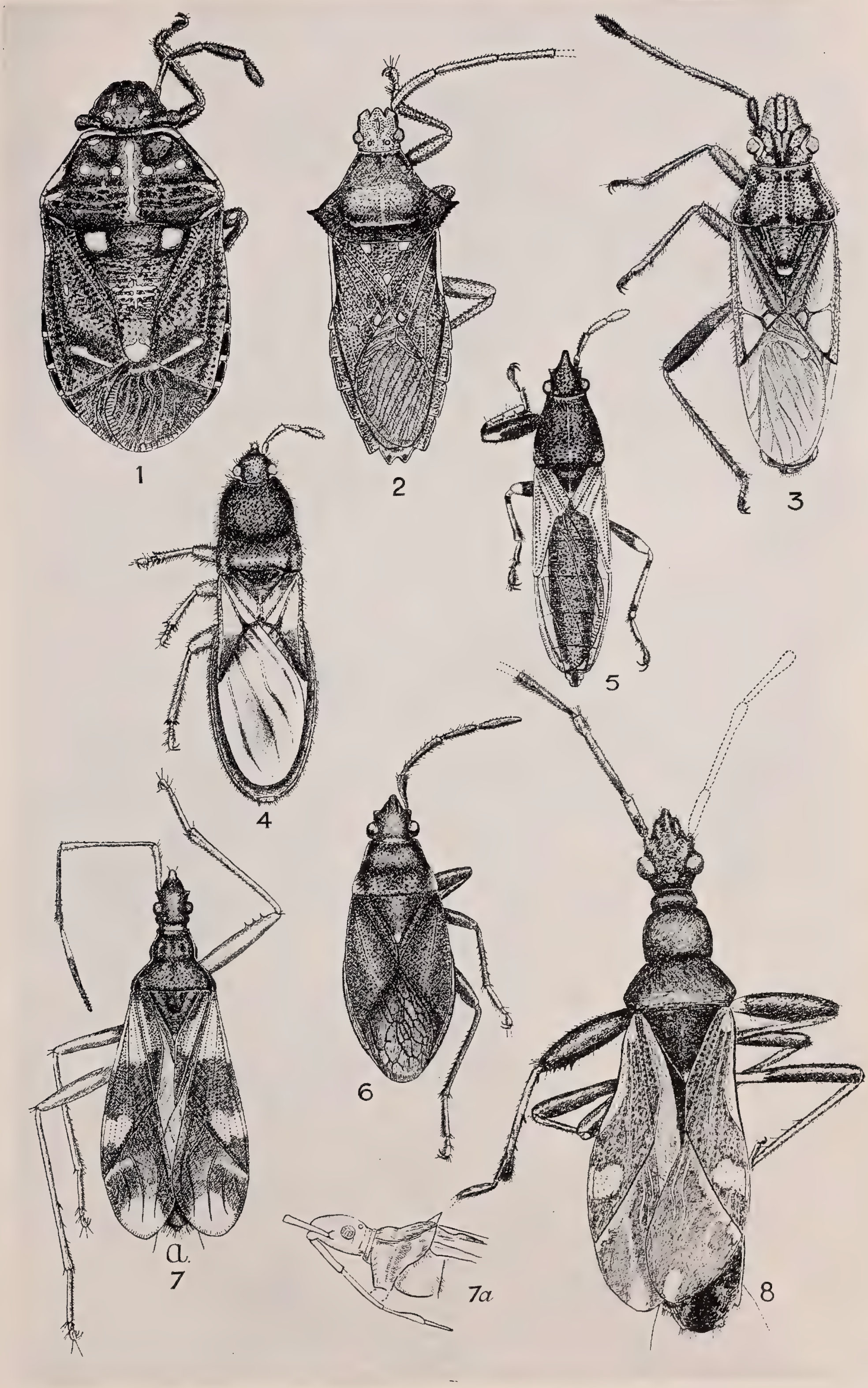

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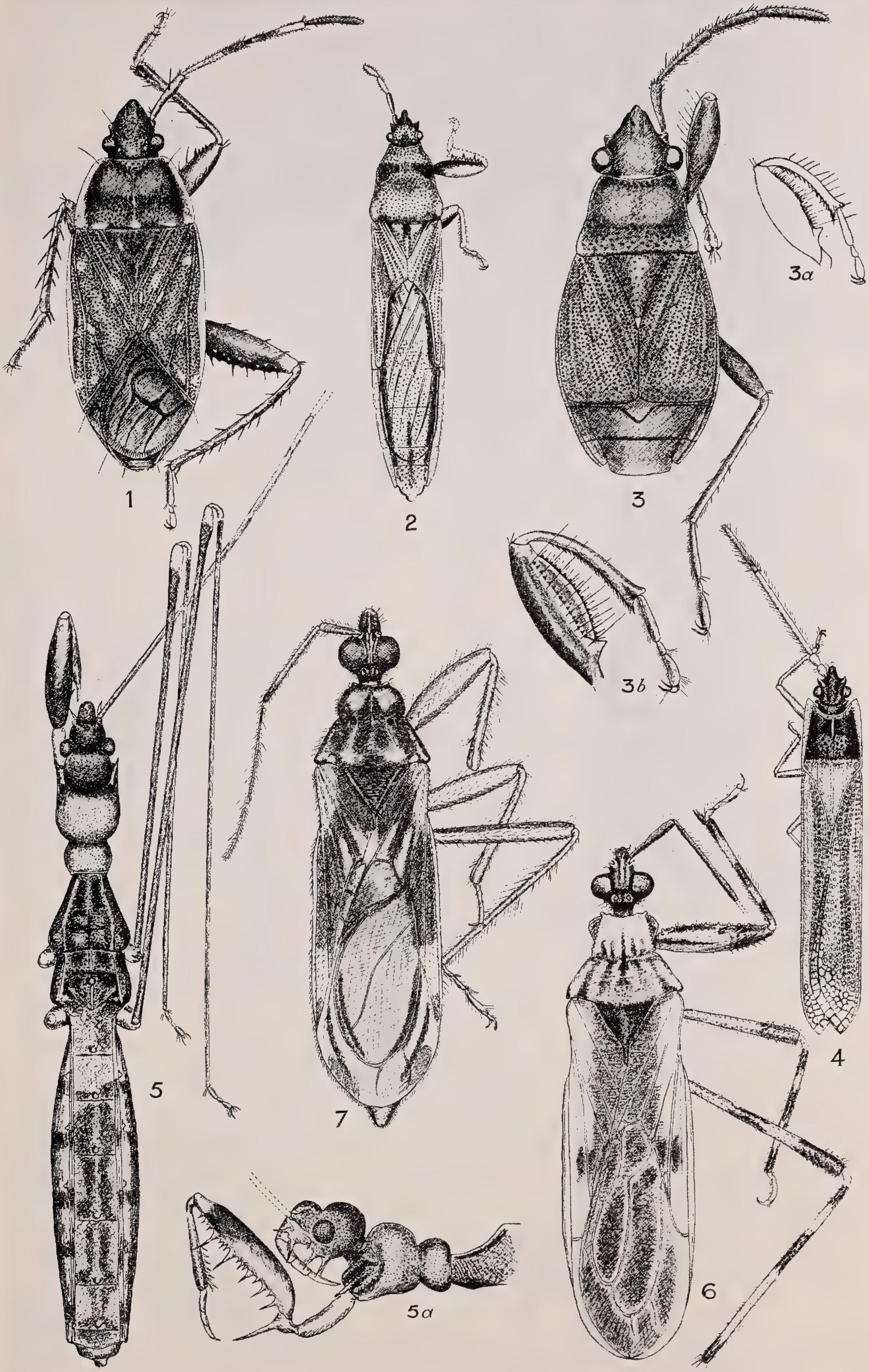

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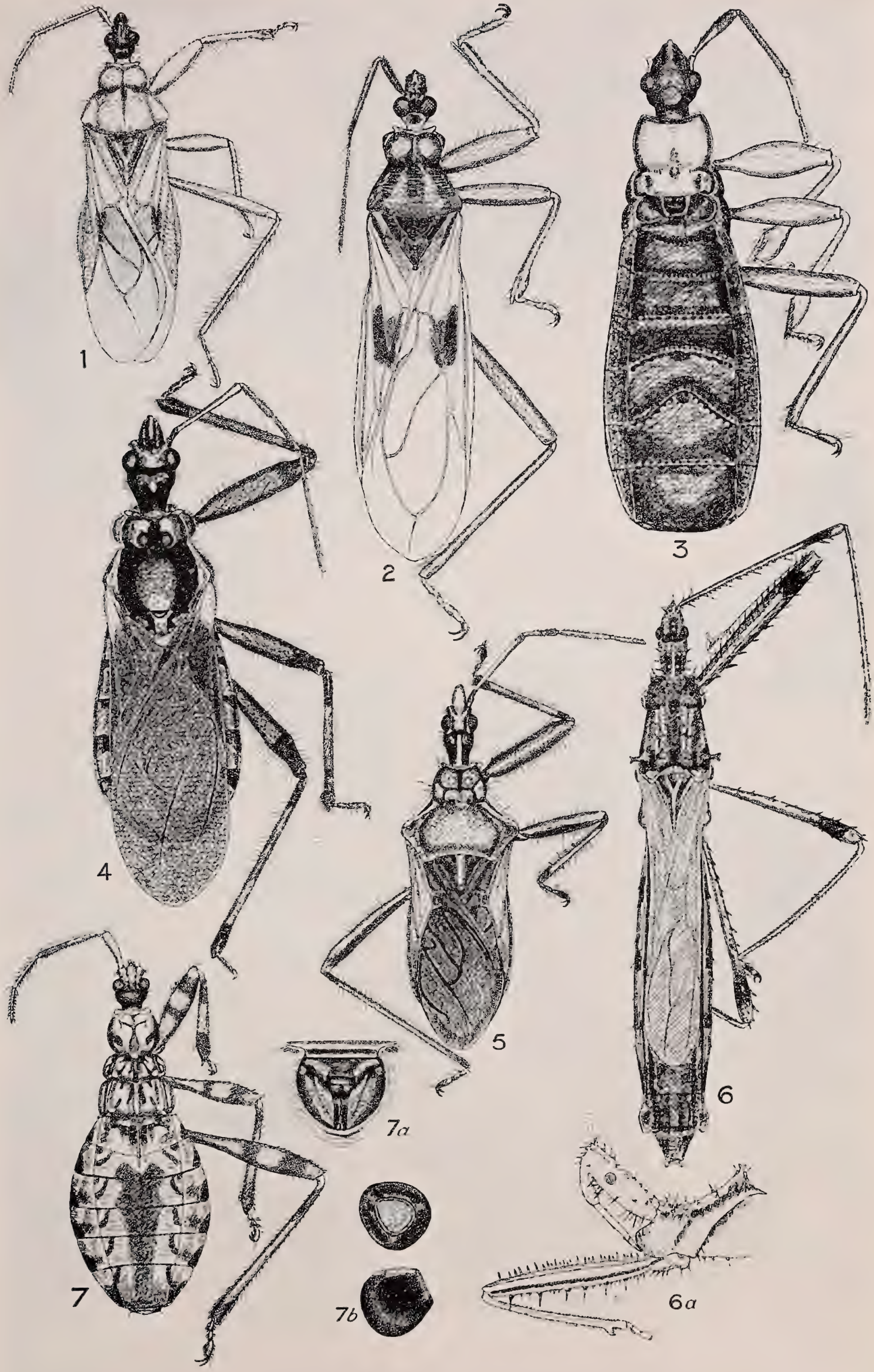

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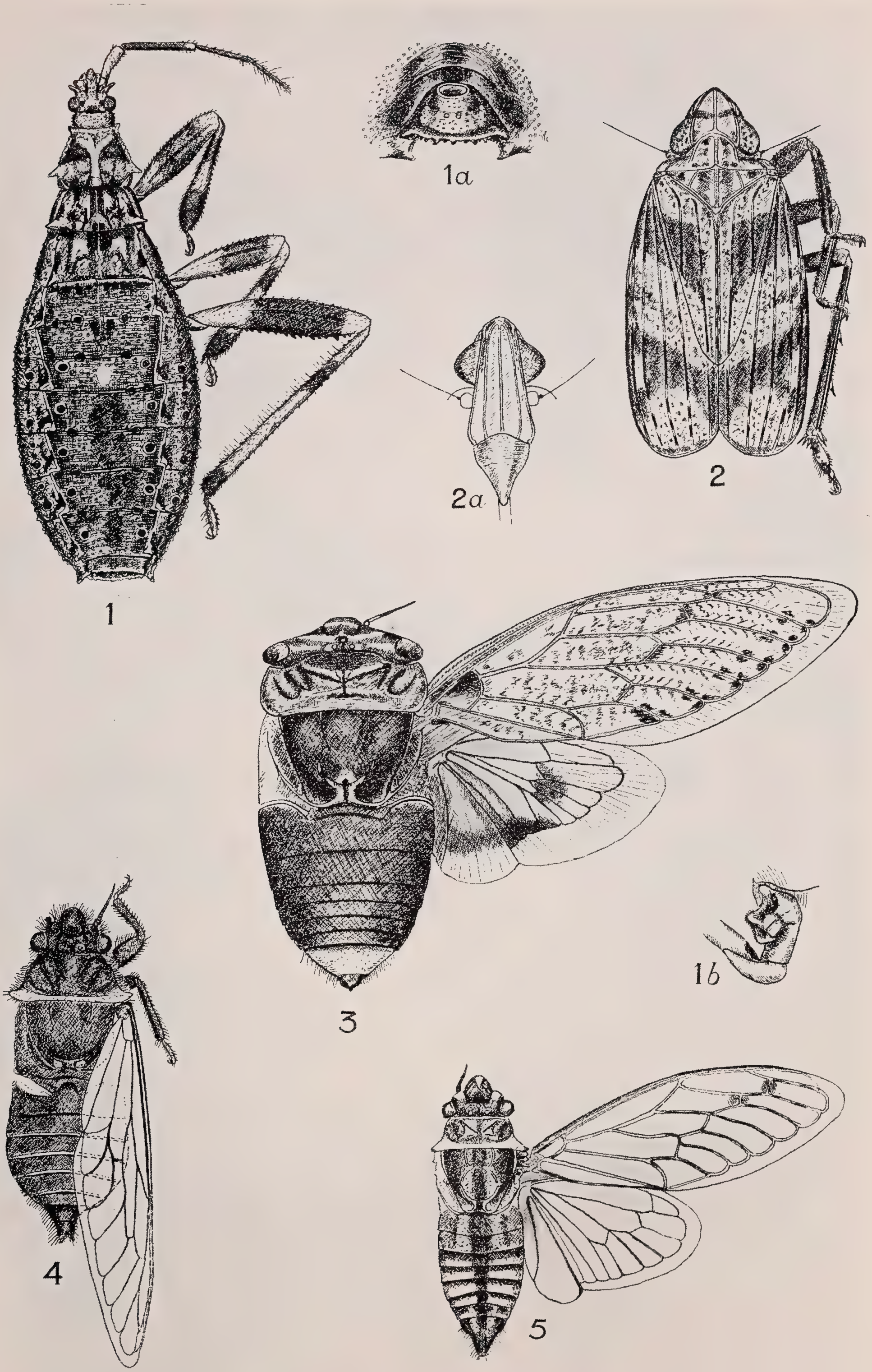

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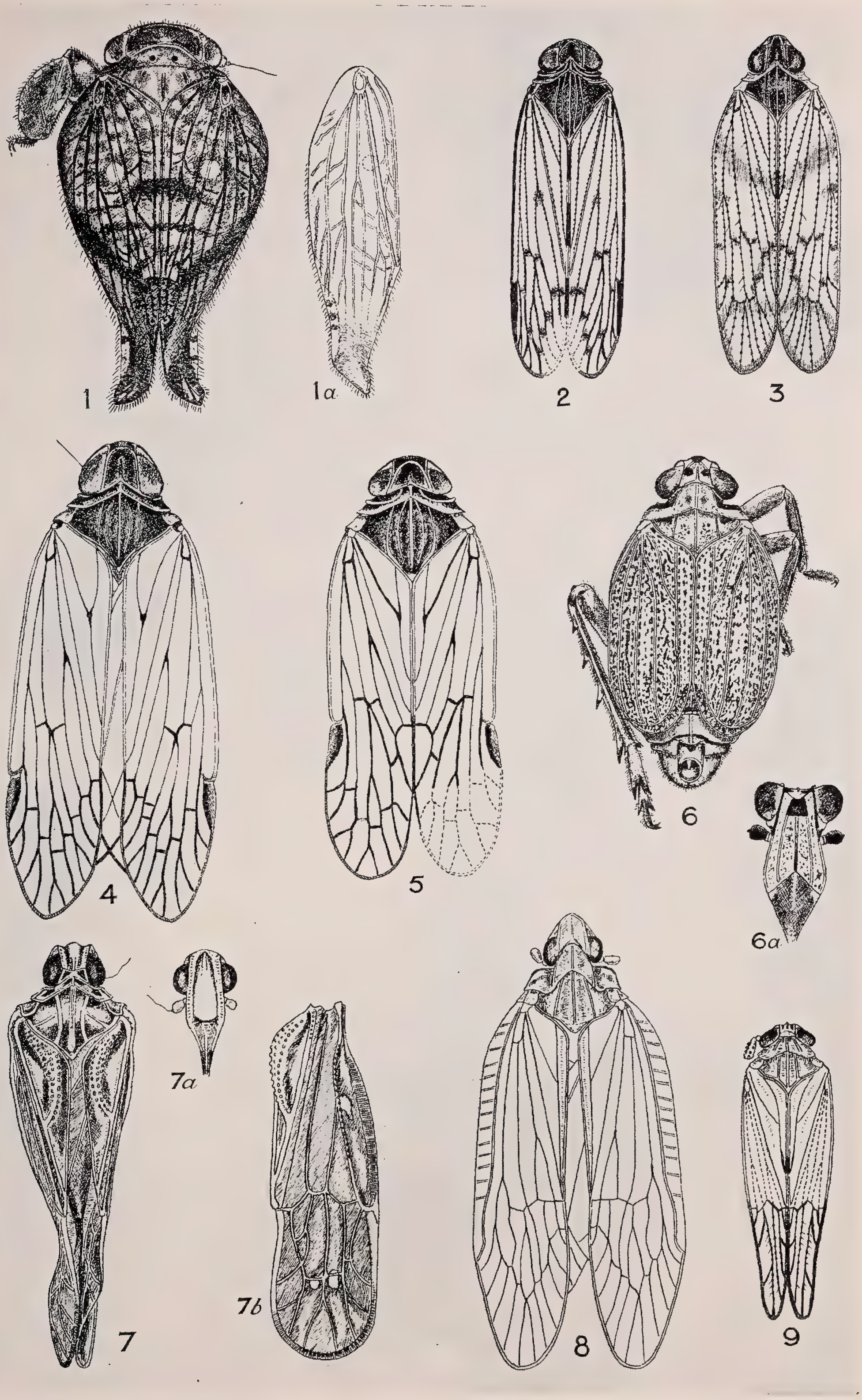

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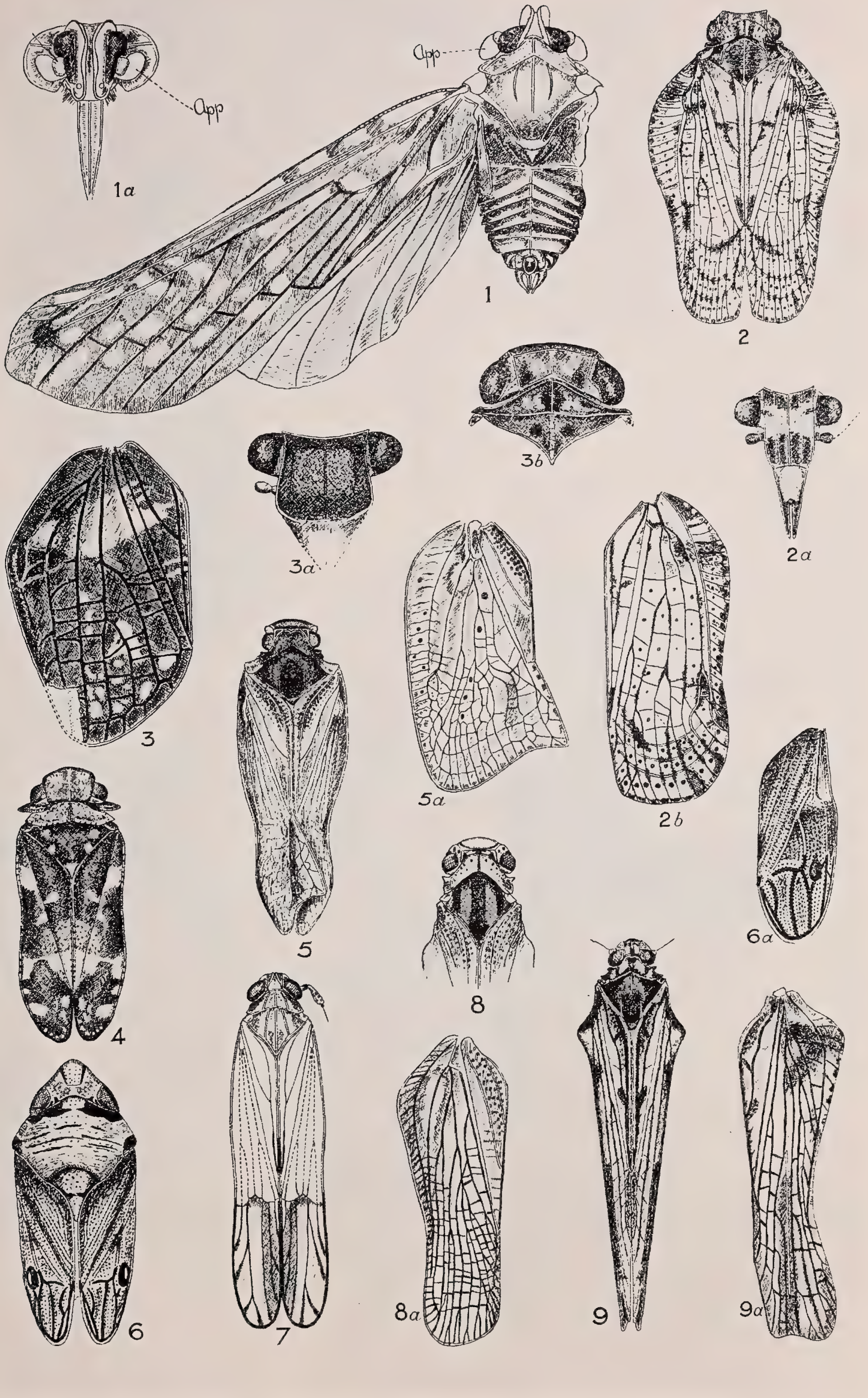

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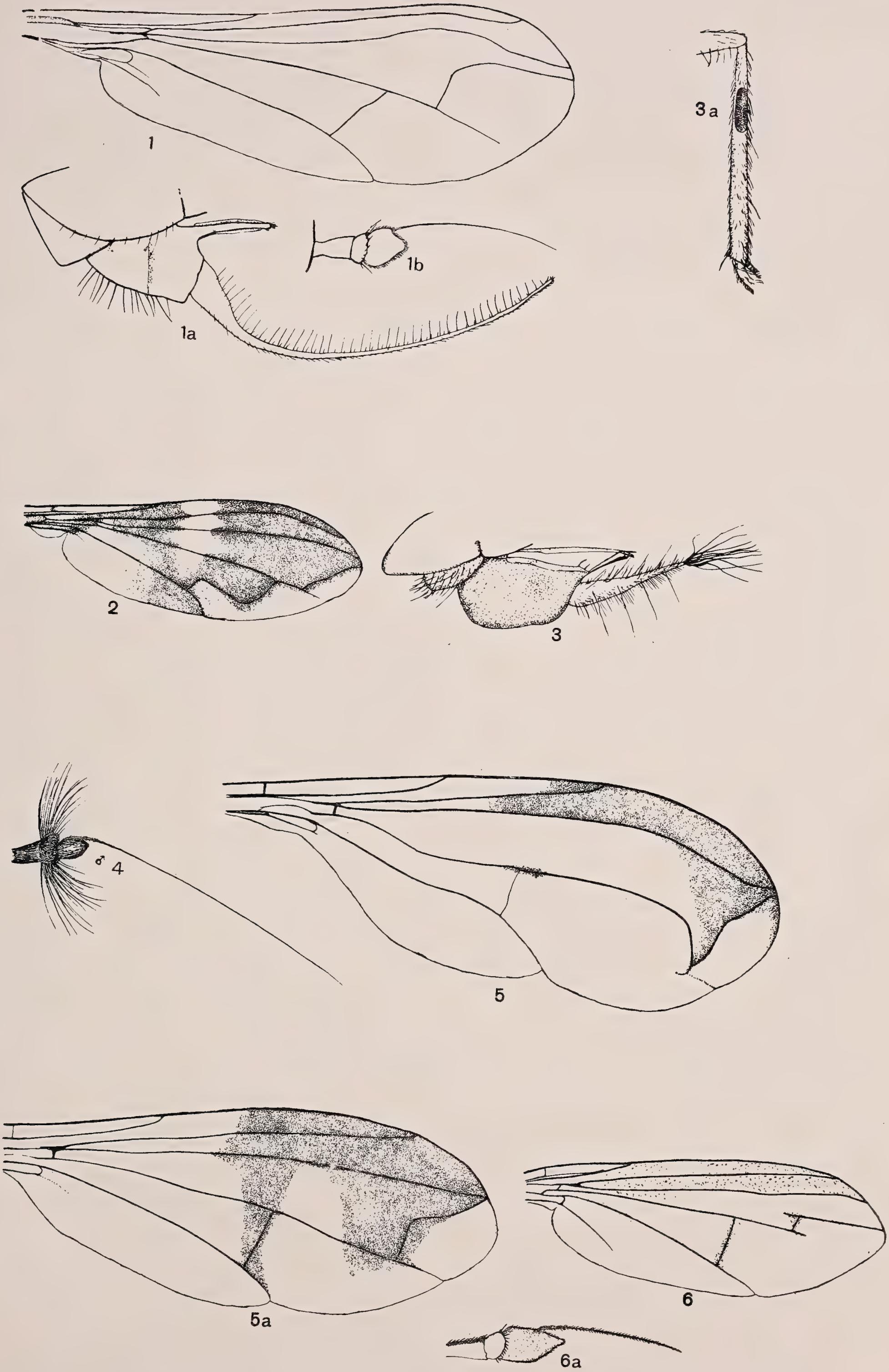
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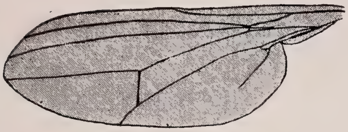
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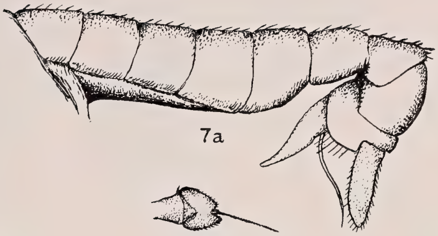
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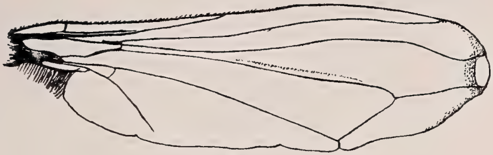
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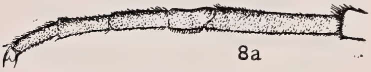
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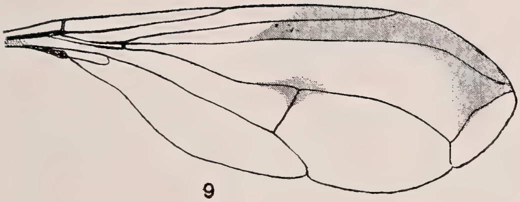
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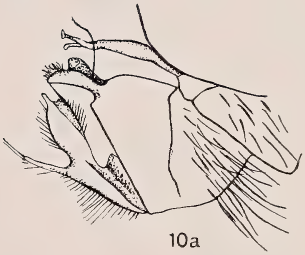
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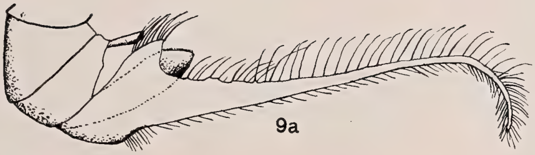
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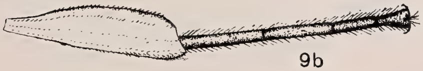
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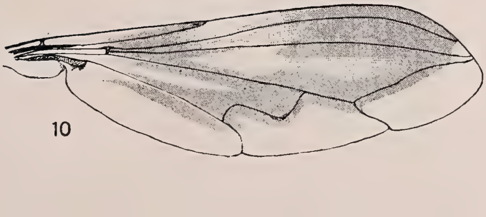
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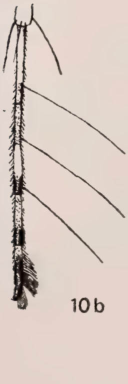
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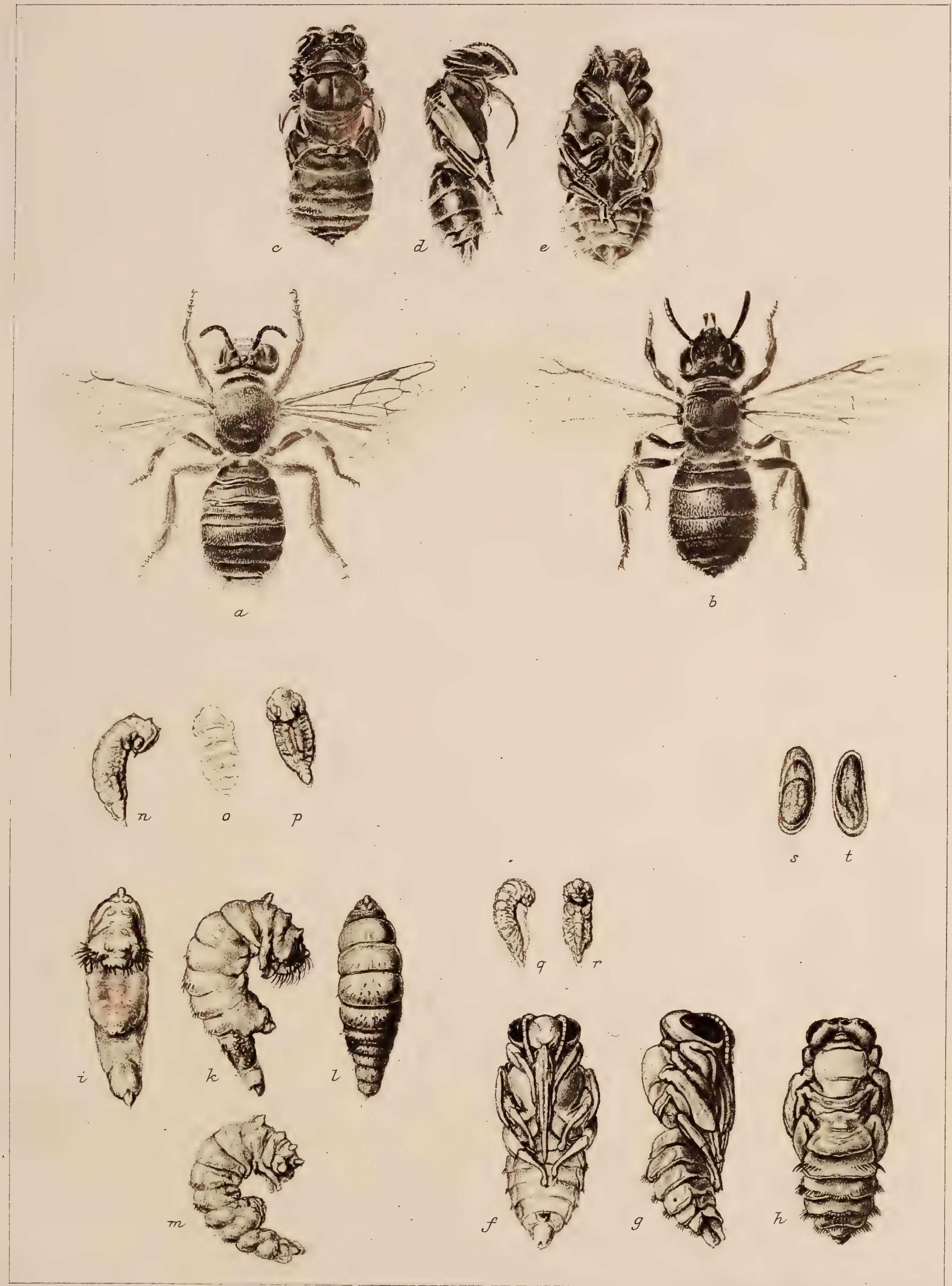

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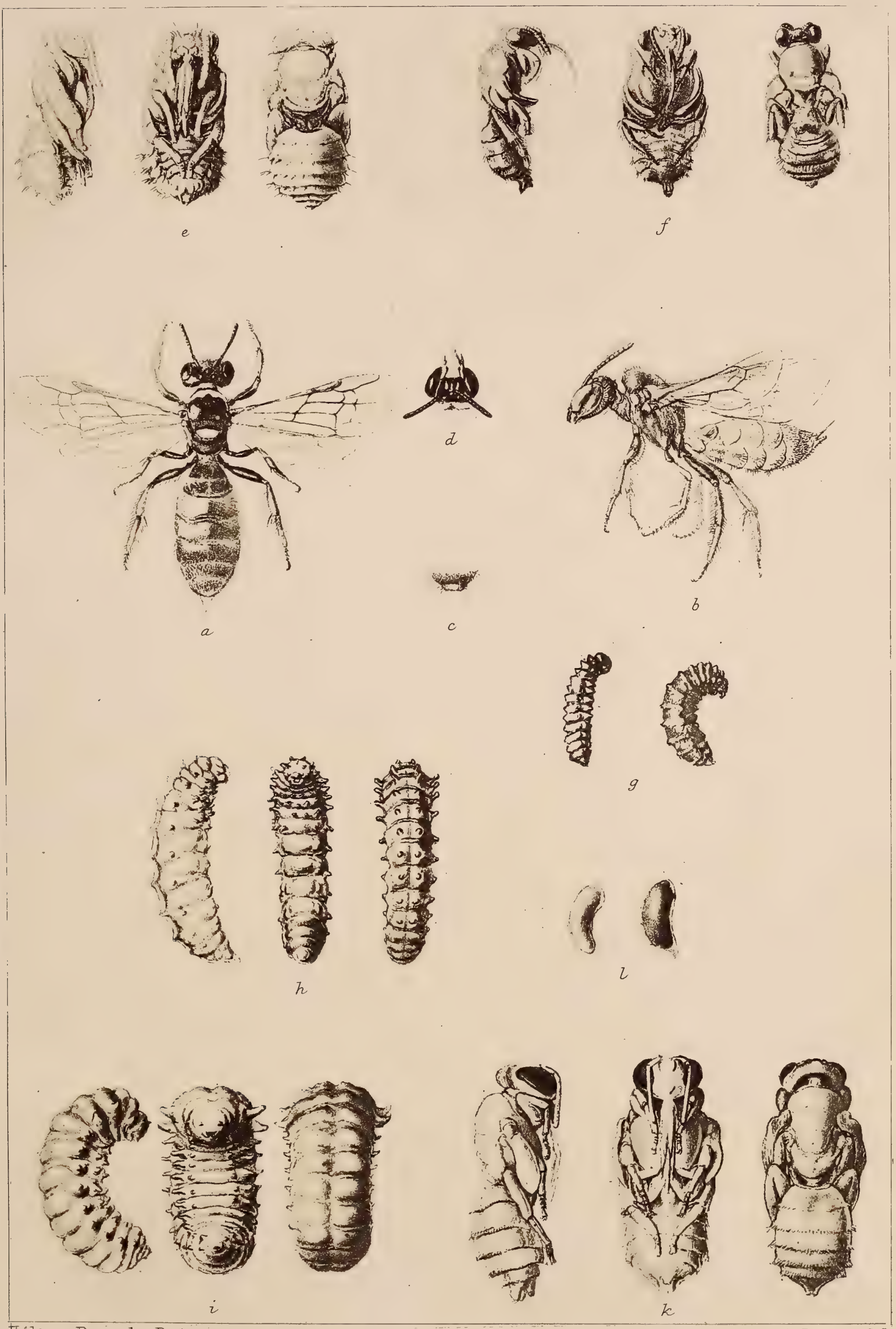

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